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Installation of Air Quality Data Handling Subsystem, AQDHS-II for the Connecticut Department of Environmental Quality

Abcor, Inc, Wilmington, Mass Walden Research Div

Prepared for

Environmental Protection Agency, Boston, Mass Office of Air Programs

Feb 77

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16. ABSTRACT Walden Division of Abcor, Inc. was retained by the Environmental Protection Agency in February 1976 to install the AQDHS-II system for the Connecticut Department of Environmental Protection. The purpose of this installation was to provide the Connecticut Department of Environmental Protection with improved access to, and analysis capabilities of, its air quality data. Prior to installation of AQDHS-II, punched cards and magnetic tapes served as the storage media for all air quality data. Most data requests were filled using locally developed computer programs to select and report on the needed information. The retrieval capabilities of AQDHS-II perform the search of stored air quality data, thereby eliminating the need to read in extensive card data. A second objective of the installation was to reduce the required processing by EPA and to improve the quality of the SAROAD data. The AQDHS-II editor checks for valid parameter/method/unit code combinations, and the retrieval language provides the capability to check for values that are above a certain threshold for each parameter.		
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**INSTALLATION OF AIR
QUALITY DATA HANDLING
SUBSYSTEM (AQDHS-II)
FOR THE CONNECTICUT
DEPARTMENT OF
ENVIRONMENTAL QUALITY**

**FEBRUARY 1977
FINAL REPORT**



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**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION I**

**OFFICE OF AIR PROGRAMS
BOSTON, MASSACHUSETTS 02203**

INSTALLATION OF AIR QUALITY DATA HANDLING SUBSYSTEM
(AQDHS-II) FOR THE CONNECTICUT DEPARTMENT
OF ENVIRONMENTAL PROTECTION

By

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FINAL REPORT

Prepared for
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Region I
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Boston, Massachusetts 02203
and
Connecticut Department of
Environmental Protection
Hartford, Connecticut 06115

February, 1977

This air pollution report is issued by the Region I Office of the Environmental Protection Agency, to assist state and local air pollution control agencies in carrying out their program activities. Copies of this report may be obtained, for a nominal cost, from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22151.

This report was furnished to the Environmental Protection Agency by the Walden Division of Abcor, Inc., Wilmington, Massachusetts in fulfillment of EPA Contract No. 68-02-1377, task order 10. This report has been reviewed by the Air Programs Office of EPA Region I and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Environmental Protection Agency, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

Region I Publication No. 901/9-76-010

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This work was supported by the Environmental Protection Agency (EPA) under Contract No. 68-02-1377, Task Order 10. The assistance and guidance of the EPA Project Officer, Mr. Donald C. White, was instrumental in the successful completion of this task while Ms. Susan Coole coordinate the project for the Connecticut Department of Environmental Protection. Mr. Charles Mule' provided technical guidance concerning the data processing environment and operating requirements for AQDHS-II. Mr. John Dacey, Jr., of Data Plus, Inc., served as consultant for the installation phase. Ms. Susan Scott and Mr. John Marin helped explain the intricacies of computer operations at the State of Connecticut. Mr. Victor Yanosy prepared parameter and site code tables for startup of the AQDHS-II system. Mr. Mike Anderson made useful suggestions for adapting AQDHS-II to the needs of Air Compliance Monitoring. Mr. Bill Serovy, of EPA Region I, located and corrected a problem in the 1974-75 Connecticut SAROAD data.

I. INTRODUCTION

A. BRIEF DESCRIPTION OF AQDHS-II

AQDHS-II is a subsystem of the Comprehensive Data Handling System (CDHS). CDHS is a computerized data handling system designed and developed by the Environmental Protection Agency (EPA) to help State Air Pollution Control Agencies to manage and analyze the data generated in the course of their activities. The functions of CDHS are to store, evaluate, and perform routine calculations on this data, and to facilitate satisfying EPA reporting requirements.

AQDHS-II provides a systematic method for assembling ambient monitoring data into a computer file (called the "master file"), which then provides a central resource of air pollution control information. Data from the master file can be selectively retrieved and printed. In addition, each data field which contains an air pollution reading has an associated status flag which tells whether that reading has been reported to the EPA. At the end of each quarter, a subprogram within AQDHS-II can be used to place all previously unreported readings on a computer tape that can be mailed to EPA to satisfy the agency's air quality data reporting requirements as specified under Section 51.7(a) of 40CFR.

B. STUDY OBJECTIVES

Walden Division of Abcor, Inc., was retained by the Environmental Protection Agency in February 1976 to install the AQDHS-II system for the Connecticut Department of Environmental Protection.

The purpose of this installation was to provide the Connecticut Department of Environmental Protection with improved access to, and analysis capabilities of, its air quality data. Prior to installation of AQDHS-II, punched cards, and magnetic tapes served as the storage media for all air quality data. Most data requests were filled using locally developed computer programs to select and report on the needed information. The retrieval capabilities of AQDHS-II perform the search of stored air quality data,

thereby eliminating the need to read in extensive card data.

A second objective of the installation was to reduce the required processing by EPA and to improve the quality of the SAROAD data. The AQDHS-II editor checks for valid parameter/method/unit code combinations, and the retrieval language provides the capability to check for values that are above a certain threshold for each parameter.

Thus the installation of AQDHS-II in Connecticut gives the Department of Environmental Protection new and timely capabilities for data access and analysis, while easing the resources needed by EPA Region I to process and verify a quarterly SAROAD report from Connecticut.

C. OVERVIEW OF THE INSTALLATION PROCEDURE

Walden's responsibilities on this project were the following:

- To install AQDHS-II on the Connecticut Central Data Processing Service IBM 370/168.
- To ensure that the software was functioning properly by executing the test cases supplied with the system.
- To bring the AQDHS-II system on line by creating the initial master file, based on Connecticut SAROAD (Storage and Retrieval of Aerometric Data system) data from 1960-1975 provided by the project officer.
- To prepare an orientation workbook/user's manual and to present a one-week orientation and demonstration session for Department personnel.
- To be "on call" for a period of 6 months after the orientation week to aid the Connecticut Department of Environmental Protection in resolving any operational problems which might arise during this period, and to assist the Department through two quarterly air quality (SAROAD) reporting cycles.

II. INSTALLATION OF AQDHS-II

The original version of AQDHS was available in 1972; the most recent version is AQDHS-II and is documented in the AQDHS-II Program Documentation and User's Guide [1]. AQDHS-II stores and maintains measurements of air quality which have been input to the subsystem in either of two formats: the EPA SAROAD format or the official AQDHS-II format. The Connecticut SAROAD data (in card image format) from 1960-1975 was used as the source of data for the initial generation of the master file. Since a conversion program within AQDHS-II provides for the continued use of the SAROAD format for updates, this is the only format of data that will be used. AQDHS-II provides a full range of input capabilities, including adding, changing or deleting information in the master file.

The more significant processing functions of the subsystem are:

- Data checking
- Statistical calculations
- Report flagging
- Report generation

Input data is checked for acceptability in those instances where such action is possible. These checks are supplemented by normal data processing checks to ensure that data is entered with appropriate attributes. For example, numeric fields are checked to see that only numbers have been key-punched. A special function provides for flags attached to air quality data to indicate whether the data has been reported to the SAROAD system (i.e., whether reported to Region I) and whether the data has been changed since last sent to SAROAD. In addition to the quarterly SAROAD report, AQDHS-II generates three major reports for routine agency use. These are:

- A detailed report of raw data showing file contents on a site-by-site basis.
- A sliding average report showing a moving average of a selected pollutant for the usual intervals taken over a twenty-four hour period.

- A statistical analysis report which contains the results of the statistical processing: both arithmetic and geometric means and standard deviations, maximum and minimum values, and a broad range of percentile values.

All reports are titled with descriptive headings. Details of the AQDHS-II system are contained in the EPA [1] and Walden [2] user's manual.

A. INSTALLATION TASKS

The AQDHS-II system consists of fourteen computer programs written for American National Standard (ANS) COBOL, and one FORTRAN program. Installation of these programs at the Connecticut computer facility required the following steps:

- Change the JCL as given on the installation tape for compatibility with the conventions at the Connecticut computer center.
- Copy the system from the installation tape to the disk and update the source programs (through Update #14).
- Compile and link-edit all programs.
- Execute the fifteen test cases.
- Bring the system on-line by creating a master file from the 1960-1973 SAROAD data from NADB (National Aerometric Data Bank) and the 1974-1975 SAROAD data from Region I.
- Prepare jobs for performing all normal operations of AQDHS-II.

B. CHRONOLOGICAL RECORD OF THE INSTALLATION

Walden installed the AQDHS-II system during the period of February-May, 1976. Prior to this installation, Walden had installed AQDHS-II and tested it on an IBM 370/155 at our local data processing facility. A user's manual, specific to AQDHS-II as installed for the Connecticut Department of Environmental Protection, was completed in early April, and an orientation week for Department personnel was held during the period May 17-21, 1976. The follow-up period extended for six months after the orientation week, and terminated with the completion of the contract on December 6, 1976.

A chronological record of the project is presented below:

January

- Meeting January 20, 1976 at Region I

Participants

Brian Kemerer	Walden
Richard D. Siegel	Walden
Donald White	EPA Region I
Louis Gitto	EPA Region I
Bill Serovy	EPA Region I

Discussion

Weekly reports and cost estimates are required. No changes to the AQDHS-II source code will be made without prior approval from the Project Officer. SAROAD data for 1974-1975 will be supplied by Region I, while previous data will come from NADB. There is no need for the Project Officer to supply an AQDHS-II installation tape, since the tapes and updates have already been sent to Walden by Lloyd Hedgepeth.

February

- Pre-Installation Site Visit on February 19, 1976 at Connecticut DEP-Air Compliance.

Participants

Donald White	EPA Region I
Charles Mule	DEP - Air Compliance
John A. Marin	DEP - Air Compliance
Dick McCourt	Central Data Processing Service
Joseph Matava	Central Data Processing Service
Robert Zalucki	Central Data Processing Service
Henry Beal	DEP - Air Compliance
Stanton Ellison	F&C, SIS Division
Brian Kemerer	Walden
John Dacey, Jr.	Data Plus, Inc.

Discussion

A program flow diagram and approximate schedule were distributed.

The system configuration for the Connecticut IBM 370/168 was obtained. It was agreed that Connecticut DEP would pay for the computer costs involved in installing and testing AQDHS-II. Disk storage for the AQDHS-II was discussed. There are alternatives to storing the source programs on the existing disk. Walden agreed to try to minimize computer costs by looking in detail at the billing algorithms.

- Walden certified that we had previously installed and tested AQDHS-II at the Wang Laboratories Computer Center in Burlington, Massachusetts, and at North Dakota Central Data Processing in Bismarck, North Dakota.
- An account number for the AQDHS-II installation was established.
- All necessary data sets were moved from the AQDHS-II installation tape to disk EP0715.
- Charles Mule was provided with information concerning generational data sets.
- While Walden built an AQDHS-II master file on a previous installation contract, it was discovered that the number of digits to the right of the decimal point in a reading determines which record on the master file will contain that reading (e.g., a reading of 113.0 will be separate from a reading of 56.00). It was known that the 1960-1973 SAROAD data from Durham would have a consistent number of decimals for each parameter, but the 1974-1975 data provided by Region I would have to be made consistent. Bill Serovy of Region I was contacted on February 16 and agreed to take care of this problem.

March

- The official updates to the AQDHS-II source programs were completed.
- All fifteen programs were compiled and link-edited. The COBOL compiler was IBM Program Product 5740-CB1, Release 1.0.
- Required changes in the cataloged procedures were completed.
- All fifteen test cases were executed.
- Vic Yanosy of Connecticut Air Compliance Section was given a description of the input formats for the site and parameter code tables. Together with the summary listing of the Connecticut SAROAD data, these formats were used to prepare comprehensive parameter and site code tables.

April

- The site and parameter code tables were created.
- The AQDHS-II master file was created.

May

- Account numbers were assigned to each AQDHS-II job step to conform to Connecticut data processing standards. Job names and program names were assigned for use by the Air Compliance Section. These job names were incorporated into the text of the workbook.
- The source programs for AQDHS-II were installed on PANVALET so that they would not take up space on the Environmental Protection disk. A procedure was developed so that the standard IEBUPDTE updates, supplied by NADB, could be used to update the programs on PANVALET.
- A back-up tape for the AQDHS-II system was created.
- The AQDHS-II workbook for Connecticut was completed.

The training seminar for AQDHS-II was held during the week of May 17-21, 1976. A brief summary by day is presented below:

- Monday, 5/17 - An overview of the AQDHS-II data base was followed by a discussion of the parameter, site, and standard tables. In the afternoon, jobs were submitted by Air Compliance (AC) personnel to add entries to each table.
- Tuesday, 5/18 - A review of the jobs submitted showed that the tables had been updated successfully. After a lecture on how to add data to the master file, seminar participants practiced using the "add", "change", and "delete" functions. A procedure was developed for the quarterly report process (see Figure 3-2). This procedure performs error-checking of high values by retrieving only those values above a certain level. These suspicious values can then be checked for accuracy.
- Wednesday, 5/19 - Each seminar participant executed a retrieval of data from the master file. The afternoon discussion of statistical analysis revealed that the 0.1 - percentile reading would be valuable for use in Larsen techniques, but does not appear on the printout. It would also be useful to be able to select data from the master file in SAROAD format (either card or tape media) for use in other data analysis programs.
- Thursday, 5/20 - Additional practice in the retrieval of data from the AQDHS-II master file was performed by AC personnel. In the afternoon, a management session

was held to discuss the funding and support necessary to utilize the AQDHS-II system. The need to perform the standard program updates, as published by NADB, was emphasized. The cost of operating each AQDHS-II job was estimated (see Table 3-4), as well as the overall cost for a quarterly report (see Table 3-5).

Friday, 5/21 - Since the quarterly report tape for the first quarter of 1976 had been mailed to Region I before the start of the seminar week, a detailed outline of the jobs necessary to put this data on the AQDHS-II master file was prepared. By the end of the seminar week, all of the first quarter data had passed the AQDHS-II edit.

- Prior to the seminar week, it was recognized that the cost of storing the entire AQDHS-II master file on disk would be prohibitive. Walden proposed to put the master file on tape. Mr. Charles Mule, Manager of Data Processing, requested that one copy of the most frequently used data (1974 on) be placed on disk, with several backup copies on tape. In addition, he requested a separate "historic" tape for the pre-1974 data. Since the technical proposal specified that all copies of the master file would be placed on disk, there was no time allotted to write the special Job Control Language (JCL) to allow data to be printed from either tape or disk. One day of follow-up time was used to implement the two separate master files.

June

- No activities.

July

- No activities.

August

- With the approval of the Project Officer, the Department of Environmental Protection used AQDHS-II to make the quarterly SAROAD report without using any of Walden's budgeted follow-up time.

September

- Meeting with Air Compliance personnel at Hartford, September 21, 1976.

Participants

Charles Mule	Connecticut Department of Environmental Protection, Data Processing
Greg Wight	Connecticut Department of Environmental Protection, Air Compliance
Mike Anderson	Connecticut Department of Environmental Protection, Air Compliance
Victor Yanosy	Connecticut Department of Environmental Protection, Air Compliance
Brian Kemerer	Walden

Discussion

There have been no operational problems with the AQDHS-II system as installed. Use of the follow-up time to implement several additional functions, such as updating the "historic" tape master file, was discussed. A letter which outlined these requests was sent to the Project Officer. Approved requests were implemented in October.

October

- A new job (EP2219) was provided to permit the historic master file to be updated, since errors and additional data have been found.

November

- Three jobs were provided for the purpose of combining the current and historic master files. EP2291 prints a combined Detail List Report, EP2292 a combined Statistical Report, and EP2293 a combined Sliding Average Report.

- To implement Update #14 of the AQDHS-II source programs, the following tasks were accomplished:
 1. Program AXMERGE was compiled, link-edited, and tested.
 2. Programs TXTREDIT and FXFILMNT were compiled, link-edited, and tested.
 3. Program AXCONVRT was compiled and link-edited. It was then used to generate the SAROAD add and change tapes for the third quarter report.
 4. The cataloged procedures AQSFUPDT and AQSTEDIT were modified to comply with Update #14.
- An out-of-sort condition on the current (disk) master file was corrected using the IBM Sort/Merge utility.

III. DESCRIPTION OF AQDHS-II AS INSTALLED

A. LOCATION OF AQDHS-II DATA SETS

Figure 3-1 depicts the location of the AQDHS-II data sets at the Connecticut Central Data Processing Service. Note that 004816 and 004575 are the backup tapes, and should not be used for any other purpose.

Because of limited disk space, the master file was divided into two parts. The first contains the data from 1974 to the present, and is located on the Department of Environmental Protection disk (EP0715). It is backed up by a generational data set of two tapes, named A.EP.MSR. The second part is "historical" data from 1960-1973, and is located on a series of three tapes. A generational data set named A.EP.OLD is used to update the historical master file.

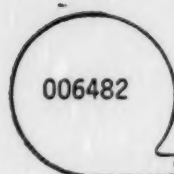
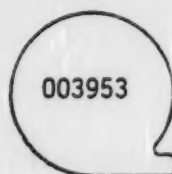
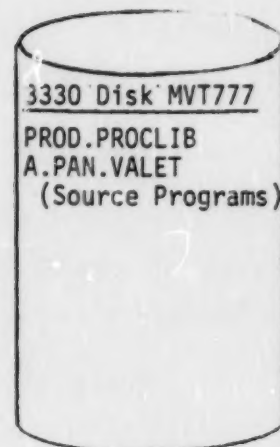
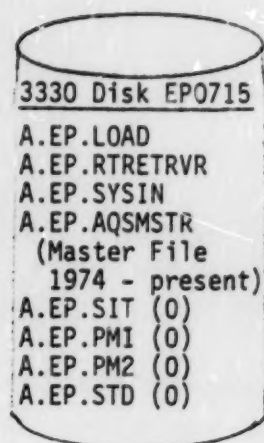
B. NAME AND FUNCTION OF AQDHS-II JOBS

Table 3-1 gives the name and function of each job of the AQDHS-II system as installed for Connecticut.

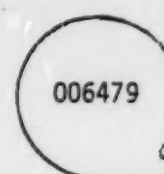
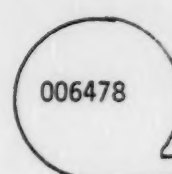
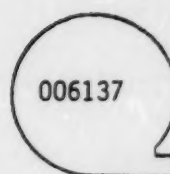
A flow chart of the quarterly report process is shown in Figure 3-2. Note the use of the retrieval language and detail list report to retrieve only records which contain a reading which is suspiciously high. This function has already caught errors which were missed in repeated visual scans, and is expected to improve the quality of the SAROAD data reported to EPA Region I.

C. CHANGES MADE FROM THE STANDARD SYSTEM

Several changes were made necessary by the conventions used at the Connecticut Central Data Processing Service.



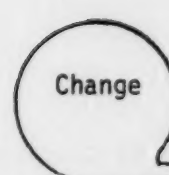
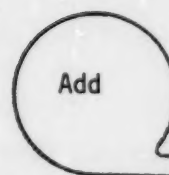
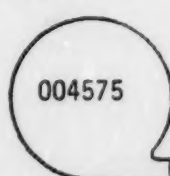
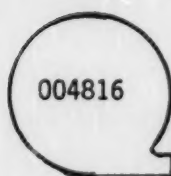
A.EP.MSR (0)
A.EP.MSR (-1)
(backups for Master File,
1974 - present)



A.EP.OLD (0)
A.EP.OLD (-1)
A.EP.OLD (-2)

(Master File
1960 - 1973)

AQDHS-II BACKUP TAPE(S)



(Assigned Each Quarter)

FIGURE 3-1 LOCATION OF AQDHS-II DATASETS

TABLE 3-1
NAME AND FUNCTION OF AQDHS-II

Job Name	Function
EP2236	Update the Parameter Code Table
EP2237	Update the Site Code Table
EP2238	Update the Standards Table
EP2241	Edit SAROAD Data
EP2242	Update Current (Disk) Master File with SAROAD Data
EP2286	Generate Quarterly Report Tapes
EP2287	Detail List Report (Current Master File)
EP2288	Data Analysis and Statistical Report (Current Master File)
EP2289	Sliding Average Report (Current Master File)
EP2291	Detail List Report (Combined Master File)
EP2292	Data Analysis and Statistical Report (Combined Master File)
EP2293	Sliding Average Report (Combined Master File)
EP2213	Listing of Parameter, Site, and Standards Tables
EP2217	AQDHS-II Backup Program
EP2218	AQDHS-II Restore Program
EP2219	Update Historic (Tape) Master File with SAROAD Data
EP2226	Run IEBUPDTE from PANVALET
EP2228	Recompile COBOL Program and Place in Load Library

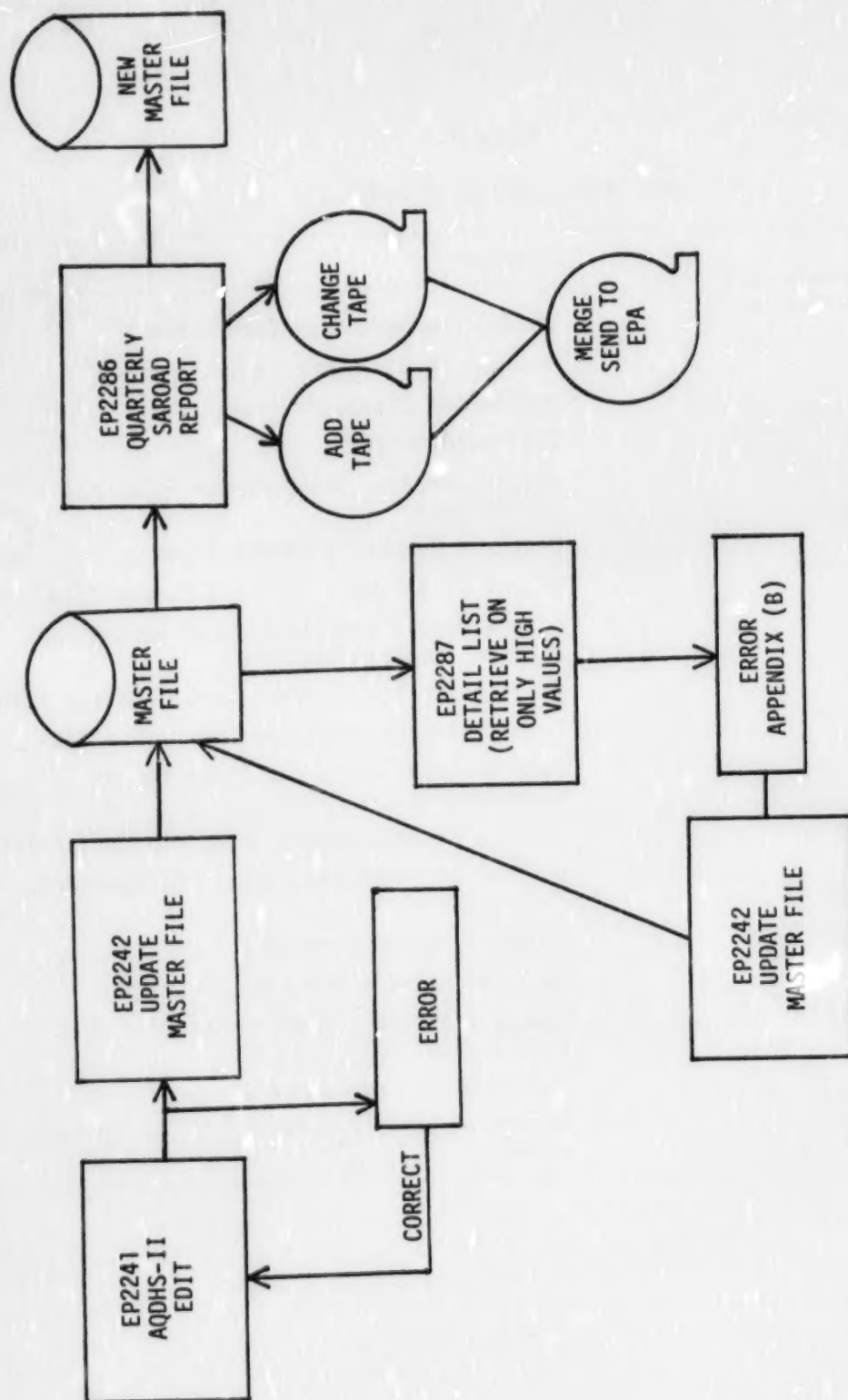


Figure 3-2 FLOW CHART FOR THE QUARTERLY REPORT PROCESS

1. All Department of Environmental Protection data sets must begin with the letters "A.EP", which was made the project name in the cataloged procedures.
2. The Environmental Protection disk is a 3330 volume named EP0715.
3. The cataloged procedures had to be renamed as shown in Table 3-2.
4. The source programs had to be renamed as shown in Table 3-3.
5. Corrections for naming generational data sets limited the length of the names to A.EP.MSR (backup for current master file), A.EP.PM1, A.EP.PM2, A.EP.SIT, A.EP.STD, and A.EP.OLD (historic master file).

The above changes resulted in the Job Control Language and Cataloged Procedures given in Appendices A and B, respectively.

The following changes to the source code were necessary to make the programs run efficiently on IBM equipment, as well as to minimize the cost.

1. The SOURCE-COMPUTER and OBJECT-COMPUTER parameters of each COBOL program were changed from IBM 360 to IBM 370.
2. The file descriptions in each program accessing the master file were changed to BLOCK CONTAINS 0 RECORDS (see Figure 3-3). The blocking factor was then set by the JCL to reduce the number of I/O operations required.
3. The file descriptions in each program accessing the SAROAD data, input transactions, or internal transactions were also changed to BLOCK CONTAINS 0 RECORDS (see Figure 3-4). Note that several blank lines were used.
4. The size of the Parameter, Site, and Standard Tables were increased to 250 entries. Since the procedure described in Appendix C of the Program Documentation and User's Guide [1] was strictly followed, there is no need to describe the changes in this report.

No other changes were made to the source code. All official Updates to the AQDHS-II system will be standard IEBUPDTE format. Although the source code resides in the PANVALET library due to the lack of disk space on EP0715, the IEBUPDTE-PANVALET job EP2226 listed in Appendix A will perform the standard update and write the resulting source code back to PANVALET.

TABLE 3-2

CORRESPONDENCE OF AQDHS-II AND CONNECTICUT
CATALOGED PROCEDURE NAMES

AQDHS-II Cataloged Procedure	Connecticut Cataloged Procedure
AQSACNVT	EP2286
AQSCNVRT	EP2241
AQSDANAL	EP2291
AQSELIST	EP2288
AQSFUPDT	EP2240
AQSHUPD1	EP2236
AQSHUPD2	EP2237
AQSHUPD3	EP2238
AQSILIST	EP2293
AQSMSENT	EP2289
AQSNSENT	EP2294
AQSRETVR	EP2287
AQSSLIST	EP2292
AQSTEDIT	EP2239

TABLE 3-3
CORRESPONDENCE OF PROGRAMS AND ACCOUNT NUMBERS

Accounting Keyword	AQDHS-II Source Program	Conn. Account #	Rate	Language
Edit & Update	HXTABLE1	EP2236	601	COBOL
Edit & Update	HXTABLE2	EP2237	601	COBOL
Edit & Update	HXTABLE3	EP2238	601	COBOL
Edit	TXTRREDIT	EP2239	601	COBOL
Update	FXFILMNT	EP2240	601	COBOL
Convert	CXCONVRT	EP2241	601	COBOL
Extract	AXCONVRT	EP2242	601	COBOL
Create	LXLNGPRC	EP2243	601	COBOL
Convert	IKFCBL00	EP2244	601	COMPILER
Load	IEWL	EP2286	601	UTILITY
Extract	RETRIEVE	EP2287	601	COBOL
List	EXRPTLST	EP2288	601	COBOL
Reorg	MXSENTNL	EP2289	601	COBOL
Reorg	NXSENTNL	EP2291	601	COBOL
Summarize	DXSTATIS	EP2292	601	FORTRAN
List	SXPRINTS	EP2293	601	COBOL
List	IXSLDAVG	EP2294	601	COBOL

```

./ CHANGE NAME=ADCONVRT
./ NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER, IBM-370, 00001800 * REPLACEMENT*
OBJECT-COMPUTER, IBM-370, 00001900 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00004100 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00010800 * REPLACEMENT*

```

IEB8161 MEMBER NAME (ADCONVRT) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

```

./ CHANGE NAME=EDRPTLST
./ NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER, IBM-370, 00001300 * REPLACEMENT*
OBJECT-COMPUTER, IBM-370, 00001400 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00005100 * REPLACEMENT*

```

IEB8161 MEMBER NAME (EDRPTLST) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

```

./ CHANGE NAME=FDFILMNT
./ NUMBER NEW1=100,INCR=100
OBJECT-COMPUTER, IBM-370, 00001400 * REPLACEMENT*
SOURCE-COMPUTER, IBM-370, 00001300 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00003800 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00007200 * REPLACEMENT*

```

IEB8161 MEMBER NAME (FDFILMNT) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

```

./ CHANGE NAME=IDSLOAVG
./ NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER, IBM-370, 00001300 * REPLACEMENT*
OBJECT-COMPUTER, IBM-370, 00001400 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00005500 * REPLACEMENT*

```

IEB8161 MEMBER NAME (IDSLOAVG) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

```

./ CHANGE NAME=HDSSENTNL
./ NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER, IBM-370, 00001500 * REPLACEMENT*
OBJECT-COMPUTER, IBM-370, 00001600 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00003400 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00005200 * REPLACEMENT*

```

IEB8161 MEMBER NAME (HDSSENTNL) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

```

./ CHANGE NAME=RTRETRVR
./ NUMBER NEW1=100,INCR=100
SOURCE-COMPUTER, IBM-370, 00001400 * REPLACEMENT*
OBJECT-COMPUTER, IBM-370, 00001500 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00003300 * REPLACEMENT*
BLOCK CONTAINS 0 RECORDS 00004100 * REPLACEMENT*

```

IEB8161 MEMBER NAME (RTRETRVR) FOUND IN NM DIRECTORY, TTR IS NOW ALTERED.

Note: All line numbers refer to the source code as sequenced after Update #8.

FIGURE 3-3

SOURCE CODE CHANGES TO BLOCK THE MASTER FILE WITH JCL

D. ESTIMATED JOB COSTS FOR AQDHS-II

The estimated cost of operating individual jobs at the Connecticut Central Data Processing Service is given in Table 3-4. The cost of the AQDHS-II jobs not listed in Table 3-4 is negligible.

An estimated cost for the quarterly report process using AQDHS-II is given in Table 3-5.

TABLE 3-4
COST OF AQDHS-II JOBS

Job	Purpose	Cost
EP2241	Edit SAROAD Cards	\$0.25 + \$5.00/box of cards
EP2242	Add SAROAD Cards to AQDHS	\$0.50 + \$6.50/box of cards
EP2286	Make 2 Quarterly Report Tapes	\$2.50
EP2287 or EP2291	Detail List Report	\$1.25 + \$0.04/page
EP2288 or EP2292	Statistical Analysis Report	\$1.25 + \$0.02/page
EP2289 or EP2293	Sliding Average Report	\$1.25 + \$0.015/page

Note: AQDHS-II currently uses 19 out of the 400 disk cylinders assigned to EP; this cost is paid out of the DP Operating Budget.

TABLE 3-5
COST OF A QUARTERLY REPORT USING AQDHS-II

Type Data	Approximate # of Cards
COHS	1,000
CO	1,500
OZONE	500
HI-VOL and BUBBLERS	1,000
SO ₂	<u>2,500</u>
	6,500 or about 4 boxes of cards
Cost to Edit 4 boxes of SAROAD Cards	\$21
Cost to Add 4 boxes of cards to AQDHS-II	\$28
Cost to Check for High-Values using Detail List Report	\$20
Cost to Fix High-Values	<u>\$10</u>
	\$79

IV. SUGGESTED MODIFICATIONS

When the AQDHS-II programs were written, it was assumed that all readings of the same parameter would have the same number of digits to the right of the decimal point. In practice, this is a poor assumption. The on-line monitoring system at Connecticut uses more digits for 1-hour SO₂ readings than are contained in the data provided by the Project Officer for building the AQDHS-II master file. In addition, forms can be inadvertently filled out with correct data, but the wrong number of digits. The data is then placed on the master file, and the Data Analysis and Statistical Report programs generate incorrect statistics. However, there is no warning that the statistics are in error. It is suggested that the Data Analysis program should be modified to accept differing numbers of digits from the master file.

The Sliding Average Report generates one page of printed output for each day and has no wrap-around capability between days. Its main application would be to 1-hour readings, and the averaging period should allow a 24-hour sliding average to be reported from 1-hour readings. The best format would be the same as the Detail List Report, but with the following addition: A summary page should give the twenty highest averages for each parameter before moving to the next. Ideally, the Statistical Analysis Report would be produced for the averaged readings so that they could be compared to the appropriate 3-hour, 8-hour, or 24-hour standards.

It would be useful to print the 0.1-percentile value on the Statistical Report for use in the Larsen model.

V. REFERENCES

1. Comprehensive Data Handling System, Air Quality Data Handling Subsystem (AQDHS-II) Program Documentation and User's Guide, EPA/450-3-74-045, Environmental Protection Agency, Research Triangle Park, North Carolina, 1974.
2. Kemerer, B.L., Workbook for Air Quality Data Handling Subsystem (AQDHS-II), prepared for the Connecticut Department of Environmental Protection, under contract from the U.S. Environmental Protection Agency, Research Triangle Park, North Carolina, 1976.

APPENDIX A
JOB CONTROL LANGUAGE FOR AQDHS-II

EP2236 - UPDATE THE PARAMETER CODE TABLE

```
//EP2236 JOB (EP,AGCY,30,250,0),'BRIAN',MSGLEVEL=(1,1),  
// CLASS=M  
//ONE EXEC EP2236  
//SORT.INPUT DD *  
/*
```

EP2237 - UPDATE THE SITE CODE TABLE

```
//EP2237 JOB (EP,AGCY,30,250,0),'BRIAN',MSGLEVEL=(1,1),  
// CLASS=M  
//ONE EXEC EP2237  
//SORT.INPUT DD *  
/*  
//
```

EP2238 - UPDATE THE STANDARDS TABLE

```
12 //EP2238 JOB (EP,AGCY,30,250,0),'BRIAN',MSGLEVEL=(1,1),  
11 // CLASS=M  
11 //ONE EXEC EP2238  
10 //SORT.INPUT DD *  
9 /*  
//
```

EP2241 - EDIT SAROAD DATA

```
//EP2241 JOB (EP,AGCY,10,80,0),'SMC-AUDHS',MSGLEVEL=(1,1),  
// CLASS=M  
//ONE EXEC EP2241,PROGRAM=CACONVRT  
//CONVERT.INPUT DD *  
$2  
/*  
//CONVERT.OUTPUT DD UNIT=SYSDA,  
// DISP=(NEW,PASS),  
// SPACE=(TRK,(100,50),RLSE),  
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),  
// DSNNAME=&&OLDTRANS  
//TWO EXEC EP2239  
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80  
//EDIT.INPUT DD DSNNAME=&&OLDTRANS,  
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),  
// DISP=(OLD,DELETE)  
//
```

EP2242 - UPDATE MASTER FILE WITH SAROAD DATA

```
//EP2242 JOB (EP,AGCY,10,20,0),'SMC-AQDHS',MSGLEVEL=(1,1).
```

```
// CLASS=M
```

```
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2286,02)
```

```
//SYSPRINT DD DUMMY
```

```
//SYSIN DD DUMMY,DCB=BLKSIZE=2000
```

```
//SYSUT1 DD *
```

```
  $2
```

```
/*
```

```
//SYSUT2 DD DSN=SSSAROAD,
```

```
// SPACE=(TRK,(500,100)),
```

```
// DCB=(RECFM=FB,RECL=80,BLKSIZE=12800),
```

```
// UNIT=DISK,
```

```
// DISP=(NEW,PASS)
```

```
//ONE EXEC EP2241,PROGRAM=CACONVRT
```

```
//CONVERT.AQSPRINT DD DUMMY
```

```
//CONVERT.INPUT DD DSN=SSSAROAD,
```

```
// DCB=(RECFM=FB,RECL=80,BLKSIZE=12800),
```

```
// DISP=(OLD,DELETE)
```

```
//CONVERT.OUTPUT DD UNIT=DISK,
```

```
// DISP=(NEW,PASS),
```

```
// SPACE=(TRK,(100,50),RLSE),
```

```
// DCB=(RECFM=FB,RECL=80,BLKSIZE=6880),
```

```
// DSNNAME=SSOLDTRANS
```

```
//TWO EXEC EP2240,SERIAL=003953
```

```
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80
```

```
//EDIT.INPUT DD DSNNAME=SSOLDTRANS,
```

```
// DCB=(RECFM=FB,RECL=80,BLKSIZE=6880),
```

```
// DISP=(OLD,DELETE)
```

```
//UPDATE.INPUT DD DUMMY,DCB=BLKSIZE=80
```

```
/*
```

```
//POST EXEC PGM=IEHPROGM,COND=(0,NE),ACCT=(3100,2286,02)
```

```
/*
```

```
/* DELETE OLD 74+ MASTER FILE
```

```
/*
```

```
//SYSPRINT DD SYSOUT=A
```

```
//DD1 DD UNIT=DISK,VOL=SER=EP0715,DISP=OLD
```

```
//SYSIN DD *
```

```
SCRATCH DSNNAME=A.EP.AQSMSTR,VOL=DISK=EP0715
```

```
UNCATLG DSNNAME=A.EP.AQSMSTR
```

```
/*
```

```
//POST2 EXEC PGM=IEBGENER,COND=(0,NE),ACCT=(3100,2286,02),REGION=128K
```

```
/*
```

```
/* MOVE TEMPORARY MASTER FILE BACK TO ITS OLD SPACE
```

```
/*
```

```
//SYSIN DD DUMMY,DCB=BLKSIZE=2000
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=SSMSTR,
```

```
// DISP=(OLD,DELETE)
```

```
//SYSUT2 DD DSN=A.EP.AQSMSTR,
```

```
// UNIT=DISK,
```

```
// DCB=(RECFM=VB,BLKSIZE=12800),
```

```
// DISP=(NEW,CATLG),
```

```
// SPACE=(TRK,(200,40),RLSE),
```

```
// VOL=SER=EP0715
```

```
//
```

```
//EP2219 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1).
```

```
// CLASS=M
```

```
//ONE EXEC EP2241,PROGRAM=CACONVRT
```

```
//CONVERT.AQSPRINT DD DUMMY,DCB=BLKSIZE=80
```

```
//CONVERT.INPUT DD *
```

```
  $2
```

EP2242 (cont.) - UPDATE MASTER FILE WITH SAROAD DATA

```

/*
//CONVERT.OUTPUT DD UNIT=SYSDA,
// DISP=(NEW,PASS),
// SPACE=(TRK,(100,50),RLSE),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),
// DSN=660LDTRANS
//TWO EXEC EP2240,SERIAL=TESTXX
//PRE.SYSUT1 DD *

/*
//PRE.SYSUT2 DD DUMMY,DCB=(RECFM=FB,LRECL=80,BLKSIZE=80)
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80
//EDIT.INPUT DD DSN=660LDTRANS,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),
// DISP=(OLD,DELETE)
//UPDATE.AQSOLDMS DD DSN=A.EP.OLD(0),DISP=(OLD,KEEP)
//UPDATE.AQSNWMS DD DSN=A.EP.OLD(+1),
// UNIT=TAPE,
// LABEL=(1,SL),
// DCB=(A.GDGDUMMY,RECFM=VB,BLKSIZE=12800),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=006137
//UPDATE.INPUT DD DUMMY,DCB=BLKSIZE=80
//

```

EP2286 - GENERATE QUARTERLY REPORT TAPES

```
//EP2286 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC EP2286,SERIAL=003953
//SUBMIT,ADDFILE DD DSN=SA20A0,ADD,
// UNIT=TAPE,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4090),
// DISP=(NEW,KEEP),
// LABEL=(1,SL),
// VOL=SER=006138
//SUBMIT,CHANGE DD SYSOUT=A,
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000)
//*
//POST EXEC PGM=IEHPRGM,COND=(0,NE),ACCT=(3100,2286,02)
//*
//* DELETE OLD 74+ MASTER FILE
//*
//SYSPRINT DD SYSOUT=A
//DD1 DD UNIT=DISK,VOL=SER=EP0715,DISP=OLD
//SYSIN DD *
SCRATCH DSNNAME=A.EP.AQSMSTR,VOL=DISK<=EP0715
UNCATLG DSNNAME=A.EP.AQSMSTR
//*
//POST2 EXEC PGM=IEBGENER,COND=(0,NE),ACCT=(3100,2286,02),REGION=128K
//*
//* MOVE TEMPORARY MASTER FILE BACK TO ITS OLD SPACE
//*
//SYSIN DD DUMMY,DCB=BLKSIZE=2000
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=EQSMSTR,
// DISP=(OLD,DELETE,KEEP)
//SYSUT2 DD DSN=A.EP.AQSMSTR,
// UNIT=DISK,
// DCB=(RECFM=VB,BLKSIZE=12800),
// DISP=(NEW,CATLG),
// SPACE=(TRK,(240,30),RLSE),
// VOL=SER=EP0715
//
```

EP2287 - DETAIL LIST REPORT

```
//EP2287 JOB (EP,AGCY,10,80,0),'SMC-A00HS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC EP2287,
//      ANSWRFL=RTANSR08,
//      DISP=(NEW,PASS,DELETE)
//COMPILE.INPUT DD *
$SELECT
$END
/*
//RETRIEVE.A0SANSWR DD UNIT=DISK,
// DISP=(NEW,PASS,DELETE),
// SPACE=(TRK,(100,50),RLSE),
// DCB=(RECFM=VB,BLKSIZE=12800),
// DSN=$$ANSWR
//TWO EXEC EP2288,
//      MSTRFIL=RTANSR08
//REPORT.A0SMASTR DD DSN=$$ANSWR,
// DISP=(OLD,DELETE)
//REPORT.INPUT DD *
MEAN
/*
//
```

EP2288 - DATA ANALYSIS AND STATISTICAL REPORT

```
//EP2288 JOB (EP,AGCY,30,45,0),'BRIAN',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC EP2287,
//      ANSWRFL=RTANSR07,
//      DISP=(NEW,PASS,DELETE)
//COMPILE.INPUT DD *
/*
//TWO EXEC EP2289,
//      MSTRFIL=RTANSR07,
//      STATEIL=MTANSR07
//THREE EXEC EP2294
//FOUR EXEC EP2291,
//      PROGRAM=0ASTATIS,
//      MSTRFIL=MTANSR07,
//      STATFIL=STANSR07
//FIVE EXEC EP2292,
//      STATFIL=STANSR07
//
```

EP2289 - SLIDING AVERAGE REPORT

```
//EP2289 JOB (EP,AGCY,10,80,0),'SMC-A00HS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC EP2287,
//      ANSWRFL=RTANSR06,
//      DISP=(NEW,PASS,DELETE)
//COMPILE.INPUT DD *
/*
//TWO EXEC EP2293,
//      MSTRFIL=RTANSR06
//REPORT.INPUT DD *
/*
//
```

EP2291 - DETAIL LIST REPORT (COMBINED MASTER FILE)

```
//EP2291 JOB (EP,AGCY,10,80,0),'SMC-AODHS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2286,02),REGION=160K
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A,EP,OLD(0),DISP=(OLD,KEEP)
//SYSUT2 DD DSN=88OLD,
// UNIT=DISK,
// SPACE=(CYL,(50,10),RLSE),
// DCB=(RECFM=VB,BLKSIZE=12800),
// DISP=(NEW,PASS)
//PRE EXEC PGM=SORT,ACCT=(3100,2286,02),REGION=240K,TIME=10
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=(SHR,PASS)
//SYSOUT DD SYSOUT=A
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(40),,CONTIG)
//SORTWK02 DD UNIT=(SYSDA,SEP=SORTWK01),SPACE=(CYL,(40),,CONTIG)
//SORTWK03 DD UNIT=(SYSDA,SEP=(SORTWK01,SORTWK02)),
// SPACE=(CYL,(40),,CONTIG)
//SORTIN DD DSN=88OLD,DISP=(OLD,DELETE)
// DD DSN=A,EP,AQSMSTR,DISP=(OLD,KEEP)
//SORTOUT DD UNIT=DISK,
// DISP=(NEW,PASS,DELETE),
// SPACE=(CYL,(50,10),RLSE),
// DSN=88SORTED
// DCB=(RECFM=VB,BLKSIZE=12800)
//SYSIN DD *
SORT FIELDS=(7,15,A,28,10,A,22,6,A,6,1,A),FORMAT=CH
/*
//ONE EXEC EP2287,
// ANSWRFL=RTANSR08,
// DISP='NEW,PASS,DELETE'
//COMPILE.INPUT DD *
SSSELECT
SSEND
/*
//RETRIEVE,AQSMSTR DD DSN=88SORTED,DISP=(OLD,DELETE)
//TWO EXEC EP2288,
// MSTRFIL=RTANSR08
//REPORT.INPUT DD *
MEAN
/*
//
```

EP2292 - DATA ANALYSIS AND STATISTICAL REPORT (COMBINED MASTER FILE)

```
//EP2292 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1),
//  CLASS=M
//ONE EXEC PGM=IERGENER,ACCT=(3100,2286,02),REGION=160K
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A,EP,OLD(0),DISP=(OLD,KEEP)
//SYSUT2 DD DSN=88OLD,
//  UNIT=DISK,
//  SPACE=(CYL,(50,10),RLSE),
//  DCB=(RECFM=VB,BLKSIZE=12800),
//  DISP=(NEW,PASS)
//PRE EXEC PGM=SORT,ACCT=(3100,2286,02),REGION=240K,TIME=10
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=(SHR,PASS)
//SYSOUT DD SYSOUT=A
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(40),,CONTIG)
//SORTWK02 DD UNIT=(SYSDA,SEP=SORTWK01),SPACE=(CYL,(40),,CONTIG)
//SORTWK03 DD UNIT=(SYSDA,SEP=(SORTWK01,SORTWK02)),
//  SPACE=(CYL,(40),,CONTIG)
//SORTIN DD DSN=88OLD,DISP=(OLD,DELETE)
```

```
//  DD DSN=A,EP,AQSMSTR,DISP=(OLD,KEEP)
//SORTOUT DD UNIT=DISK,
//  DISP=(NEW,PASS,DELETE),
//  SPACE=(CYL,(50,10),RLSE),
//  DSN=88SORTED
//  DCB=(RECFM=VB,BLKSIZE=12800)
//SYSIN DD *
SORT FIELDS=(7,15,A,28,10,A,22,6,A,6,1,A),FORMAT=CH
/*
```

```
//ONE EXEC EP2287,
//  ANSURFL=RTANSR07,
//  DISP='NEW,PASS,DELETE'
```

```
//COMPILE.INPUT DD *
```

```
$SSELECT
```

```
AREA CODE = '0680'
```

```
SITE = '002'
```

```
AGENCY = 'F'
```

```
PARAMETER-CODE = '42401'
```

```
TIME CODE = '11'
```

```
((YEAR = '74'
```

```
MONTH = '12')
```

```
(YEAR = '75'
```

```
MONTH = '01'))
```

```
$SEND
```

```
/*
```

```
//RETRIEVE.AQSMSTR DD DSN=88SORTED,DISP=(OLD,DELETE)
```

```
//TWO EXEC EP2289,
```

```
//  MSTRFIL=RTANSR07,
```

```
//  STATFIL=RTANSR07
```

```
//THREE EXEC EP2294
```

```
//FOUR EXEC EP2291,
```

```
//  PROGRAM=DASTATIS,
```

```
//  MSTRFIL=RTANSR07,
```

```
//  STATFIL=STANSR07
```

```
//FIVE EXEC EP2292,
```

```
//  STATFIL=STANSR07
```

```
//
```

EP2293 - SLIDING AVERAGE REPORT (COMBINED MASTER FILE)

```
//EP2293 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC PGM=IERGENER,ACCT=(3100,2286,02),REGION=160K
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A,EP,OLD(0),DISP=(OLD,KEEP)
//SYSUT2 DD DSN=88OLD,
// UNIT=DISK,
// SPACE=(CYL,(50,10),RLSE),
// DCB=(RECFM=VB,BLKSIZE=12800),
// DISP=(NEW,PASS)
//PRE EXEC PGM=SORT,ACCT=(3100,2286,02),REGION=240K,TIME=10
//SORTLIB DD DSN=SYS1.SORTLIB,DISP=(SHR,PASS)
//SYSOUT DD SYSOUT=A
//SORTWK01 DD UNIT=SYSDA,SPACE=(CYL,(40),,CONTIG)
//SORTWK02 DD UNIT=(SYSDA,SEP=1,SORTWK01),SPACE=(CYL,(40),,CONTIG)
//SORTWK03 DD UNIT=(SYSDA,SEP=(SORTWK01,SORTWK02)),
// SPACE=(CYL,(40),,CONTIG)
//SORTIN DD DSN=88OLD,DISP=(OLD,DELETE)
// DD DSN=A,EP,AQSMSTR,DISP=(OLD,KEEP)
//SORTOUT DD UNIT=DISK,
// DISP=(NEW,PASS,DELETE),
// SPACE=(CYL,(50,10),RLSE),
// DSN=88SORTED,

// DCB=(RECFM=VB,BLKSIZE=12800)
//SYSIN DD *
SORT FIELDS=(7,15,A,28,10,A,22,6,A,6,1,A),FORMAT=CH
/*
//ONE EXEC EP2287,
// ANSHRFL=RTANSR06,
// DISP='NEW,PASS,DELETE'
//COMPILE.INPUT DD *
/*
//RETRIEVE,AQSMSTR DD DSN=88SORTED,DISP=(OLD,DELETE)
//TWO EXEC EP2293,
// MSTRFIL=RTANSR06
//REPORT.INPUT DD *
MEANOR
/*
//
```

EP2213 - LIST OF PARAMETER, SITE, AND STANDARDS TABLES

```
//EP2213 JOB (EP,AGCY,10,80,0),MSG=ADDMS,MSGLEVEL=(1,1),
```

```
// CLASS=M
```

```
// EXEC PGM=IEBPTPCH,ACCT=(3100,2450,02)
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=A,EP.SIT(0),DISP=SHR
```

```
//SYSUT2 DD SYSOUT=A
```

```
//SYSIN DD *
```

```
PRINT MAXFLDS=1
```

```
RECORD FIELD=(72,1,25)
```

```
TITLE ITEM=('SITE CODE TABLE',25)
```

```
TITLE ITEM=('APR. 31, 1976',80)
```

```
/*
```

```
// EXEC PGM=IEBPTPCH,ACCT=(3100,2450,02)
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=A,EP.PM1(0),DISP=SHR
```

```
//SYSUT2 DD SYSOUT=A
```

```
//SYSIN DD *
```

```
PRINT MAXFLDS=1
```

```
RECORD FIELD=(10,1,25)
```

```
TITLE ITEM=('PARAMETER CODE TABLE - CARD 1',25)
```

```
TITLE ITEM=('APR. 31, 1976',80)
```

```
/*
```

```
// EXEC PGM=IEBPTPCH,ACCT=(3100,2450,02)
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=A,EP.PM2(0),DISP=SHR
```

```
//SYSUT2 DD SYSOUT=A
```

```
//SYSIN DD *
```

```
PRINT MAXFLDS=1
```

```
RECORD FIELD=(110,1,10)
```

```
TITLE ITEM=('PARAMETER CODE TABLE - CARD 2',25)
```

```
TITLE ITEM=('APR. 31, 1976',80)
```

```
/*
```

```
// EXEC PGM=IEBPTPCH,ACCT=(3100,2450,02)
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=A,EP.STD(0),DISP=SHR
```

```
//SYSUT2 DD SYSOUT=A
```

```
//SYSIN DD *
```

```
PRINT MAXFLDS=1
```

```
RECORD FIELD=(112,1,5)
```

```
TITLE ITEM=('STANDARD TABLE',25)
```

```
TITLE ITEM=('APR. 31, 1976',80)
```

```
/*
```

EP2217 - AQDHS-II BACKUP PROGRAM

```
//EP2217 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC PGM=IEHMOVE,ACCT=(3100,2450,02)
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=DISK,SPACE=(CYL,(1,1))
//DDISK DD UNIT=DISK,VOL=SER=EP0715,DISP=OLD
//TAPEOUT DD UNIT=TAPE,
// LABEL=(1,SL),
// DISP=OLD,
// VOL=(1,RETAIN,SER=004816)
//SYSIN DD *
COPY DSNAME=A,EP,LOAD,TO=TAPE=(004816,2),FROM=DISK=EP0715,
TODD=TAPEOUT
COPY DSNAME=A,EP,SYSIN,TO=TAPE=(004816,3),FROM=DISK=EP0715,
TODD=TAPEOUT
/*
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2450,02),REGION=140K
//SYSIN DD DUMMY
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A,EP,RTRETRVR,DISP=(OLD,KEEP)
//SYSUT2 DD DSN=A,EP,RTRETRVR,
// UNIT=TAPE,
// LABEL=(4,SL),
// DCB=(RECFM=F,LRECL=80,BLKSIZE=80),
// DISP=(NEW,KEEP),
// VOL=(1,RETAIN,SER=004816)
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2450,02),REGION=100K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A,EP,PM1(0),DISP=(OLD,KEEP)
//SYSUT2 DD DSN=A,EP,PM1BACK,
// UNIT=TAPE,
// LABEL=(5,SL),
// DCB=(RECFM=F,LRECL=18,BLKSIZE=1442),
// DISP=(NEW,KEEP),
// VOL=(1,RETAIN,SER=004816)
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2450,02),REGION=100K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
12 //SYSUT1 DD DSN=A,EP,PM2(0),DISP=(OLD,KEEP)
11 //SYSUT2 DD DSN=A,EP,PM2BACK,
// UNIT=TAPE,
// LABEL=(6,SL),
10 // DCB=(RECFM=F,LRECL=110,BLKSIZE=1450),
// DISP=(NEW,KEEP),
9 // VOL=(1,RETAIN,SER=004816)
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2450,02),REGION=100K
8 //SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
7 //SYSUT1 DD DSN=A,EP,SIT(0),DISP=(OLD,KEEP)
//SYSUT2 DD DSN=A,EP,SITBACK,
6 // UNIT=TAPE,
// LABEL=(7,SL),
5 // DCB=(RECFM=F,LRECL=72,BLKSIZE=1656),
// DISP=(NEW,KEEP),
4 // VOL=(1,RETAIN,SER=004816)
//ONE EXEC PGM=IEBGENER,ACCT=(3100,2450,02),REGION=100K
3 //SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
2 //SYSUT1 DD DSN=A,EP,STD(0),DISP=(OLD,KEEP)
1 //SYSUT2 DD DSN=A,EP,STDBACK,
```

EP2217 - AQDHS-II BACKUP PROGRAM (cont.)

```
// UNIT=TAPE,  
// LABEL=(8,SL),  
// DCR=(RECFM=FB,LREGL=112,BLKSIZE=1600),  
// DISP=(NEW,KEEP),  
// VOL=(,RETAIN,SER=004816)  
//
```

EP2218 - AQDHS-II RESTORE PROGRAM

```
//EP2218 JOB (EP,AGCY,10,80,0),'SMC-AQDHS',MSGLEVEL=(1,1),
// CLASS=M
//ONE EXEC PGM=IEHMOVE,ACCT=(3100,2450,02)
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=DISK,SPACE=(CYL,(1,1))
//DDISK DD UNIT=DISK,VOL=SER=EP0715,DISP=OLD
//TAPE1 DD UNIT=TAPE,
// LABEL=(1,SL),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=800),
// DISP=OLD,
// VOL=(,RETAIN,SER=004816)
//SYSIN DD *
COPY PDS=A.EP.LOAD,FROM=TAPE=(004816,2),TO=DISK=EP0715,FROMDD=TAPE1
COPY PDS=A.EP.SYSIN,FROM=TAPE=(004816,3),TO=DISK=EP0715,FROMDD=TAPE1
/*
//ONE EXEC PGM=IERGENER,ACCT=(3100,2450,02),REGION=140K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.RTRETRVR,
// UNIT=TAPE,
// LABEL=(4,SL),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=80),
// DISP=(OLD,KEEP),
// VOL=(,RETAIN,SER=004816)
//SYSUT2 DD DSN=RTRETRVR,
// UNIT=DISK,
// SPACE=(TRK,(30,10),RLSE),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=80),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=EP0715
//ONE EXEC PGM=IERGENER,ACCT=(3100,2450,02),REGION=140K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.PM1BACK,
// UNIT=TAPE,
// LABEL=(5,SL),
// DCB=(RECFM=FB,LRECL=18,BLKSIZE=1692),
// DISP=(OLD,KEEP),
// VOL=(,RETAIN,SER=004816)
//SYSUT2 DD DSN=A.EP.PM1(+1),
// UNIT=DISK,
// SPACE=(TRK,(30,10),RLSE),
// DCB=(RECFM=FB,LRECL=18,BLKSIZE=1692),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=EP0715
//ONE EXEC PGM=IERGENER,ACCT=(3100,2450,02),REGION=140K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.PM2BACK,
// UNIT=TAPE,
// LABEL=(6,SL),
// DCB=(RECFM=FB,LRECL=110,BLKSIZE=1452),
// DISP=(OLD,KEEP),
// VOL=(,RETAIN,SER=004816)
//SYSUT2 DD DSN=A.EP.PM2(+1),
// UNIT=DISK,
// SPACE=(TRK,(30,10),RLSE),
// DCB=(RECFM=FB,LRECL=110,BLKSIZE=1452),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=EP0715
//ONE EXEC PGM=IERGENER,ACCT=(3100,2450,02),REGION=140K
```

EP2218 - AQDHS-II RESTORE PROGRAM (cont.)

```
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.SITRACK,
// UNIT=TAPE,
// LABEL=(7,SL),
// DCB=(RECFM=FB,LRECL=72,BLKSIZE=1656),
// DISP=(OLD,KEEP),
// VOL=(,RETAIN,SER=004816)
//SYSUT2 DD DSN=A.EP.SIT(+1),
// UNIT=DISK,
// SPACE=(TRK,(30,10),RLSE),
// DCB=(RECFM=FB,LRECL=72,BLKSIZE=1656),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=EP0715
//ONE EXEC PGM=IEBCGENER,ACCT=(3100,2450,02),REGION=140K
//SYSIN DD DUMMY,DCB=BLKSIZE=80
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.STDRACK,
// UNIT=TAPE,
// LABEL=(8,SL),
// DCB=(RECFM=FB,LRECL=112,BLKSIZE=1680),
// DISP=(OLD,KEEP),
// VOL=(,RETAIN,SER=004816)
//SYSUT2 DD DSN=A.EP.STD(+1),
// UNIT=DISK,
// SPACE=(TRK,(30,10),RLSE),
// DCB=(RECFM=FB,LRECL=112,BLKSIZE=1680),
// DISP=(NEW,CATLG,DELETE),
// VOL=SER=EP0715
```

EP2219 - UPDATE HISTORIC (TAPE) MASTER FILE WITH SAROAD DATA

```
//EP2219 JOB (EP,AGCY,10,80,0),'SMC-ADDHS',MSGLEVEL=(1,1),
```

```
// CLASS=M
```

```
//ONE EXEC EP2241
```

```
//CONVERT.AOSPRINT DD DUMMY,DCB=BLKSIZE=80
```

```
//CONVERT.INPUT DD *
```

```
/*
```

```
/*
```

```
//CONVERT.OUTPUT DD UNIT=SYSDA,
```

```
// DISP=(NEW,PASS),
```

```
// SPACE=(TRK,(100,50),RLSE),
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),
```

```
// DSNNAME=##OLDTRANS
```

```
//TWO EXEC EP2240,SERIAL=TESTXX
```

```
//PRE.SYSUT1 DD *
```

```
/*
```

```
//PRE.SYSUT2 DD DUMMY,DCB=(RECFM=F,LRECL=80,BLKSIZE=80)
```

```
//EDIT.OPTIONS DD DUMMY,DCB=BLKSIZE=80
```

```
//EDIT.INPUT DD DSN=##OLDTRANS,
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=6880),
```

```
// DISP=(OLD,DELETE)
```

```
//UPDATE.AOSOLDWS DD DSN=A.EP.OLD(0),DISP=(OLD,KEEP)
```

```
//UPDATE.AOSNEWS DD DSN=A.EP.OLD(+1),
```

```
// UNIT=TAPE,
```

```
// LABEL=(1,SL),
```

```
// DCB=(A.GGDUMMY,RECFM=VB,BLKSIZE=12800),
```

```
// DISP=(NEW,CATLG,DELETE),
```

```
// VOL=SER=000127
```

```
//UPDATE.INPUT DD DUMMY,DCB=BLKSIZE=80
```

```
/*
```

EP2226 - RUN IEBUPDTE FROM PANVALET

```
//EP2226 JOB (EP,AGCY,10,80,0),'SMC-ADDHS',MSGLEVEL=(1,1).
```

```
// CLASS=M
```

```
//ONE EXEC PGM=PAN#1,ACCT=(3100,2450,02),REGION=96K
```

```
//PANDD1 DD DSN=A.PAN.VALET,DISP=SHR
```

```
//PANDD2 DD DSN=&&WORKFL(BLK),DISP=(NEW,PASS).
```

```
// UNIT=DISK.
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=80).
```

```
// SPACE=(TRK,(200,40,3))
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSPUNCH DD SYSOUT=B
```

```
//SYSIN DD *
```

```
WRITE WORK,EP2241
```

```
/*
```

```
//TWO EXEC PGM=IEBUPDTE,PARM=(MOD),COND=(0,NE),ACCT=(3100,2450,02)
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=&&WORKFL,DISP=(OLD,DELETE)
```

```
//SYSUT2 DD DSN=&&WORK2,DISP=(NEW,PASS),
```

```
// UNIT=DISK,
```

```
// SPACE=(TRK,(200,40,3),RLSE),
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000)
```

```
//SYSIN DD *
```

```
// CHANGE NAME=BLK
```

```
// NUMBER NEW1=100,INCR=100
```

```
MOVE SARG04 TRANSACTION TO INPUT-BUFFER.
```

0007371

```
MOVE BINARY-2 TO LINE-SKIP.
```

0007372

```
PERFORM PRINT-ROUTINE THRU PRINT-ROUTINE-END.
```

0007373

0007660

0007670

0007680

0008200

0008210

```
/*
```

```
//THREE EXEC PGM=IEBGENER,ACCT=(3100,2450,02)
```

```
//SYSIN DD DUMMY,DCB,BLKSIZE=2000
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD *
```

```
++ADD EP2241A,COBOL
```

```
/*
```

```
//SYSUT2 DD DSN=&&TEMP,
```

```
// UNIT=SYSDA,
```

```
// SPACE=(TRK,(500,100)),
```

```
// DISP=(NEW,PASS),
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000)
```

```
//FOUR EXEC PGM=IEBGENER,ACCT=(3100,2450,02)
```

```
//SYSIN DD DUMMY,DCB,BLKSIZE=2000
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSUT1 DD DSN=&&WORK2(BLK),
```

```
// DISP=(OLD,PASS),
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000)
```

```
//SYSUT2 DD DSN=&&TEMP,DISP=(MOD,PASS)
```

```
//FIVE EXEC PGM=PAN#1,ACCT=(3100,2450,02),REGION=96K
```

```
//PANDD1 DD DSN=A.PAN.VALET,DISP=SHR
```

```
//PANDD2 DD DSN=&&WORKSP,DISP=(NEW,PASS),
```

```
// UNIT=DISK,
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=80),
```

```
// SPACE=(TRK,(200,40,3))
```

```
//SYSPRINT DD SYSOUT=A
```

```
//SYSPUNCH DD SYSOUT=B
```

```
//SYSIN DD DSN=&&TEMP,
```

```
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=4000),
```

```
// DISP=(OLD,DELETE)
```

```
//
```

EP2228 - RECOMPILE COBOL PROGRAM AND PLACE IN LOAD LIBRARY

```
//EP2228 JOB (EP,AGCY,10,80,0),'SMC-ADDHS',MSGLEVEL=(1,1),
// CLASS=M
//CDHSCBLE PROC
//ONE EXEC PGM=PARM1,ACCT=(3100,2450,02),REGION=96K
//PARM01 DD DSN=A.PAN.VALET,DISP=SHR
//PARM02 DD DSN=SEWORKFL(RLK),DISP=(NEW,PASS),
// UNIT=DISK,
// DC4=(RECFM=FB,LRECL=80,BLKSIZE=80),
// SPACE=(TRK,(200,40,3))
//SYSPRINT DD SYSOUT=A
//SYSPUNCH DD SYSOUT=B
//SYSIN DD DDNAME=INPUT
//COB EXEC PGM=IKFCBL00,REGION=148K,COND=(0,NE),TIME=5.
// PARM=IDMAP,SYREF,LIB,CLIST,STATE,FLOW=10,SIZE=114K,BUF=30K
//STEPLIB DD DSN=PROD.COBOL,DISP=SHR
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD UNIT=DISK,SPACE=(460,(710,100))
//SYSUT2 DD UNIT=DISK,SPACE=(460,(710,100))
//SYSUT3 DD UNIT=DISK,SPACE=(460,(710,100))
//SYSUT4 DD UNIT=DISK,SPACE=(460,(710,100))
//SYSLIB DD DSN=PROD.COBLIB,DISP=(SHR,PASS,KEEP)
//SYSLIN DD DSN=SLDADSET,DISP=(OLD,PASS),UNIT=DISK,
// SPACE=(80,(500,100))
//SYSIN DD DSN=SEWORKFL(RLK),DISP=(OLD,DELETE)
//LKED EXEC PGM=IEWL,PARM='LIST,XREF,LET',COND=(0,NE),REGION=96K
//SYSLIN DD DSN=SLDADSET,DISP=(OLD,DELETE)
//SYSLMOD DD DSN=A.EP.LOAD(8OUT),DISP=(OLD,PASS,KEEP)
//SYSLIB DD DSN=2200.COBLIB,DISP=SHR
//SYSUT1 DD UNIT=(DISK,SEP=(SYSLIN,SYSLMOD)),SPACE=(1024,(50,20))
//SYSPRINT DD SYSOUT=A
// PEND
//TWO EXEC CDHSCBLE,ACCT=(3100,2228,02),OUT=CACONVRT
//ONE.INPUT DD *
//WRITE WORK,EP2241A
/*
//
```

APPENDIX B
CATALOGED PROCEDURES FOR AQDHS-II

```

//EP2236  PROC PROJECT=1A,EP1,
//          PROGRAM=HXTABLE1,
//          OLDMST1='PM1(0)',
//          OLDMST2='PM2(0)',
//          NEWMST1='PM1(+1)',
//          NEWMST2='PM2(+1)',
//          UNIT1=DISK,
//          UNIT2=DISK,
//          SERIAL1=EP0715,
//          SERIAL2=EP0715,
//          DISP1='NEW,CATLG,DELETE',
//          DISP2='NEW,CATLG,DELETE',
//          SPUNIT1=TRK,
//          SPUNIT2=TRK,
//          PRIMRY1=30,
//          PRIMRY2=30,
//          SCNDRY1=10,
//          SCNDRY2=10,
//          TEMP=SYSDA,
//          SORTSPC=20,
//          SORTCTL=MSORTCTL1,
//          OUT=A
//
//**
//SORT      EXEC PGM=SORT,ACCT=(3100,2286,02),
//          PARM=LCORE=409601,
//          REGION=60K,
//          TIME=(1,0)
//**
//** SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE
//**
//SORTLIB DD  DSN=SYS1.SORTLIB,
//          DISP=(SHR,PASS)
//**
//SYSOUT    DD SYSOUT=&OUT
//**
//SORTWK01 DD UNIT=&TEMP,
//          SPACE=(TRK,&SORTSPC,,CONTIG)
//**
//SORTWK02 DD UNIT=(&TEMP,SEP=(&SORTWK01)),
//          SPACE=(TRK,&SORTSPC,,CONTIG)
//**
//SORTWK03 DD UNIT=(&TEMP,SEP=(&SORTWK01,&SORTWK02)),
//          SPACE=(TRK,&SORTSPC,,CONTIG)
//**
//SORTIN    DD DSN=INPUT,
//          DCB=BLKSIZE=80
//**
//SORTOUT   DD UNIT=(&TEMP,SEP=(&SORTWK01,&SORTWK02,&SORTWK03)),
//          DISP=(NEW,PASS,DELETE),
//          SPACE=(TRK,&SORTSPC,RLSE),
//          DSN=&&TRANS,
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=80)
//**
//SYSIN     DD DSN=&PROJECT..SYSIN(&SORTCTL),
//          DISP=(SHR,PASS)
//**
//UPDATE    EXEC PGM=SPROGRAM,ACCT=(3100,2236,02),
//          REGION=60K,
//          TIME=(1,0)

```

EP2236 (cont.)

```

/**
/** MAINTAIN PARAMETER, METHOD, UNIT, MIN DETECTABLE TABLES
/**
//STEP118 DD DSNNAME=&PROJECT..LOAD,
// DISP=(SHR,PASS)
/**
/** INPUT DATA SET - CONTROL CARD AND, OPTIONALLY, TRANSACTIONS
/**
//AQSCARDS DD DSNNAME=&&TRANS,
// DISP=(OLD,DELETE)
/**
/** INPUT DATA SET - OLD MASTER KEY PORTION TABLE
/**
//AQSOOLDT1 DD DSNNAME=&PROJECT..&OLDMST1,
// DISP=(SHR,PASS)
/**
/** INPUT DATA SET - OLD MASTER DESCRIPTION PORTION TABLE
/**
//AQSOOLDT2 DD DSNNAME=&PROJECT..&OLDMST2,
// DISP=(SHR,PASS)
/**
/** OUTPUT DATA SET - NEW MASTER KEY PORTION TABLE
/**
//AQSNEWT1 DD UNIT=&UNIT1,
// VOL=SER=&SERIAL1,
// DISP=(&DISP1),
// SPACE=(&SPUNIT1,(&PRIMRY1,&SCNDRY1),RLSE),
// DCB=(A.GDGDDUMMY,RECFM=F,LRECL=80,BLKSIZE=80),
// DSNNAME=&PROJECT..&NEWMST1
/**
/** OUTPUT DATA SET - NEW MASTER DESCRIPTION PORTION TABLE
/**
//AQSNEWT2 DD UNIT=&UNIT2,
// VOL=SER=&SERIAL2,
// DISP=(&DISP2),
// SPACE=(&SPUNIT2,(&PRIMRY2,&SCNDRY2),RLSE),
// DCB=(A.GDGDDUMMY,RECFM=F,LRECL=80,BLKSIZE=80),
// DSNNAME=&PROJECT..&NEWMST2
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//AQSPRINT DD SYSOUT=&OUT
/**
/** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=&OUT
/**
//SYSOUT DD SYSOUT=&OUT
/**
//SYSOROUT DD SYSOUT=&OUT
/**
//SYSOTERM DD SYSOUT=&OUT
/**
//SYSUDUMP DD SYSOUT=&OUT
/**

```

EP2237

```
//EP2237  PROC PROJECT='A.EP',
//          PROGRAM=HXTABLE2,
//          OLDSTR='SIT(0)',
//          NEWSTR='SIT(+1)',
//          UNIT=DISK,
//          SERIAL=EP0715,
//          DISP='NEW,CATLG,DELETE',
//          SPCUNIT=TRK,
//          PRIMARY=10,
//          SECONDRY=5,
//          TEMP=SYSDA,
//          SORTSPC=10,
//          SORTCTL=HSRTCTL2,
//          OUT=A
//*
//SORT      EXEC PGM=SORT,ACCT=(3100,2286,02),
//          PARM='CORE=40960',
//          REGION=60K,
//          TIME=(1,0)
//*
//* SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE
//*
//SORTLIB   DD DSN=SYS1.SORTLIB,
//          DISP=(SHR,PASS)
//*
//SYSOUT    DD SYSOUT=JOUT
//*
//SORTWK01  DD UNIT=STEMP,
//          SPACE=(TRK,&SORTSPC.,CONTIG)
//*
//SORTWK02  DD UNIT=(STEMP,SEP=SORTWK01),
//          SPACE=(TRK,&SORTSPC.,CONTIG)
//*
//SORTWK03  DD UNIT=(STEMP,SEP=(SORTWK01,SORTWK02)),
//          SPACE=(TRK,&SORTSPC.,CONTIG)
//*
//SORTIN    DD DDNAME=INPUT,
//          DSB=BLKSIZE=80
//*
//SORTOUT   DD UNIT=(STEMP,SEP=(SORTWK01,SORTWK02,SORTWK03)),
//          DISP=(NEW,PASS,DELETE),
//          SPACE=(TRK,&SORTSPC,RLSE),
//          DSN=EE&TRANS,
//          DSB=(RECFM=F,LRECL=80,BLKSIZE=80)
//*
//SYSIN     DD DSN=EPPROJECT..SYSIN(&SORTCTL),
//          DISP=(SHR,PASS)
//*
//UPDATE    EXEC PGM=&PROGRAM,ACCT=(3100,2237,02),
//          REGION=60K,
//          TIME=(1,0)
//*
//* MAINTAIN VALID SITE CODE TABLE
//*
//STEPLIB   DD DSN=EPPROJECT..LOAD,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - TRANSACTIONS
//*
```

EP2237 (cont.)

```
//AQSTRANS DD DSN=&STRANS.
//          DISP=(OLD,DELETE)
/**
/** INPUT DATA SET - OLD VALID SITE CODE TABLE
/**
//AQSOOLDMS DD DSN=&PROJECT..&OLDMSTR.
//          DISP=(SHR,PASS)
/**
/** OUTPUT DATA SET - NEW VALID SITE CODE TABLE
/**
//AQSNWMS DD UNIT=&UNIT.
//          VOL=SER=&SERIAL.
//          DCB=(A,GDGDUMMY,RECFM=F,LRECL=80,BLKSIZE=80).
//          DISP=(&DISP),
//          SPACE=(&SPACE,(&PRIMARY,&SECONDARY),RLSE).
//          DSN=&PROJECT..&NEWMSTR
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//AQSPRINT DD SYSOUT=&OUT
/**
/** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=&OUT
/**
//SYSOUT DD SYSOUT=&OUT
/**
//SYSDOUT DD SYSOUT=&OUT
/**
//SYSDTERM DD SYSOUT=&OUT
/**
//SYSDUMP DD SYSOUT=&OUT
/**
```

```

//EP2238  PROC PROJECT='A,EP',
//          PROGRAM=HXTABLE3,
//          OLDMSTR='STD(0)',
//          NEWMSTR='STD(+1)',
//          UNIT=DISK,
//          SERIAL=EP0715,
//          DISP=(NEW,CATLG,DELETE),
//          SPCUNIT=TRK,
//          PRIMARY=10,
//          SECNDRY=5,
//          TEMP=SYSDA,
//          SORTSPC=10,
//          SORTCTL=HSRTCTL3,
//          OUT=A
/**
//SORT      EXEC PGM=SORT,ACCT=(3100,2286,02),
//          PARM=ICORE=40960,
//          REGION=60K,
//          TIME=(1,0)
/**
/** SORT INCOMING TRANSACTIONS INTO FILE SEQUENCE
/**
//SORTLIB   DD DSN=SYS1.SORTLIB,
//          DISP=(SHR,PASS)
/**
//SYSOUT    DD SYSOUT=&OUT
/**
//SORTWK01  DD UNIT=&TEMP,
//          SPACE=(TRK,&SORTSPC,,CONTIG)
/**
//SORTWK02  DD UNIT=(&TEMP,SEP=(&SORTWK01)),
//          SPACE=(TRK,&SORTSPC,,CONTIG)
/**
//SORTWK03  DD UNIT=(&TEMP,SEP=(&SORTWK01,&SORTWK02)),
//          SPACE=(TRK,&SORTSPC,,CONTIG)
/**
//SORTIN    DD DDNAME=INPUT,
//          DCB=BLKSIZE=80
/**
//SORTOUT   DD UNIT=(&TEMP,SEP=(&SORTWK01,&SORTWK02,&SORTWK03)),
//          DISP=(NEW,PASS,DELETE),
//          SPACE=(TRK,&SORTSPC,RLSE),
//          DSN=SYS1.SORTOUT,
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=80)
/**
//SYSIN     DD DSN=SYS1.SYSIN(&SORTCTL),
//          DISP=(SHR,PASS)
/**
//UPDATE    EXEC PGM=HXTABLE3,ACCT=(3100,2238,02),
//          REGION=60K,
//          TIME=(1,0)
/**
/** MAINTAIN PARAMETER STANDARDS TABLE
/**
//STEPLIB   DD DSN=SYS1.SYSIN(&SORTCTL),
//          DISP=(SHR,PASS)
/**
/** INPUT DATA SET - TRANSACTIONS
/**

```

EP2238 (cont.)

```
//AOSCARDS DD DSN=8&TRANS,
//          DISP=(OLD,DELETE)
//*
/** INPUT DATA SET - OLD STANDARDS TABLE
/**
//AOSOLDTB DD DSN=8PROJECT..8OLDMSTR,
//          DISP=(SHR,PASS)
/**
/** OUTPUT DATA SET - NEW STANDARDS TABLE
/**
//AOSSTDTB DD UNIT=8UNIT,
//          VOL=SER=8SERIAL,
//          DISP=(8DISP),
//          SPACE=(8SPCUNIT,(8PRIMARY,8SECONDARY),RLSE),
//          DCB=(A.GDGDDUMMY,RECFM=F,LRECL=80,BLKSIZE=80),
//          DSN=8PROJECT..8NEWMSTR
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//AOSPRINT DD SYSOUT=8OUT
/**
/** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=8OUT
/**
//SYSOUT   DD SYSOUT=8OUT
/**
//SYSOROUT DD SYSOUT=8OUT
/**
//SYSOTER4 DD SYSOUT=8OUT
/**
//SYSHDUMP DD SYSOUT=8OUT
/**
```

```

//EP2239  PROC PROJECT='A.EPI',
//          PROG1=TXTRREDIT,
//          PARMKFL='PML(0)',
//          SITEFIL='SIT(0)',
//          OUT=A
//*
//EDIT    EXEC PGM=&PROG1,ACCT=(3100,2230,02),
//          REGION=120K,
//          TIME=30
//*
//* EDIT AQDHS FILE MAINTENANCE TRANSACTIONS
//*
//STEPLIB DD DSN=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - EDIT OPTIONS CONTROL CARD
//*
//AQSOPTIN DD DDNAME=OPTIONS,
//          DCB=BLKSIZE=80
//*
//* INPUT DATA SET - AQDHS TRANSACTIONS
//*
//AQSTRANS DD DDNAME=INPUT,
//          DCB=BLKSIZE=80
//*
//* INPUT DATA SET - KEY PORTION OF VALID PARM, METH, UNIT TABLE
//*
//AQSPARMS DD DSN=&PROJECT..&PARMKFL,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - VALID SITE CODE TABLE
//*
//AQSSITES DD DSN=&PROJECT..&SITEFIL,
//          DISP=(SHR,PASS)
//*
//* OUTPUT DATA SET - AQDHS INTERNAL TRANSACTIONS
//*
//AQSinTRN DD DUMMY,DCB=BLKSIZE=12240
//*
//* OUTPUT DATA SET - TRANSACTION LISTING
//*
//AQSCONFR DD SYSOUT=&OUT
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES
//*
//AQSPRINT DD SYSOUT=&OUT
//*
//* OUTPUT DATA SETS - SYSTEM OPERATION
//*
//SYSPRINT DD SYSOUT=&OUT
//*
//SYSOUT   DD SYSOUT=&OUT
//*
//SYSDBOUT DD SYSOUT=&OUT
//*
//SYSOTERM DD SYSOUT=&OUT
//*
//SYSUDUMP DD SYSOUT=&OUT
//*

```

```

//EP2240  PROC PROJECT='A.EP',
//          PROG1=TXTREDIT,
//          PROG2=FXFILMNT,
//          QLODMSTR=AQSMSTR,
//          PARMKFL='PM1(0)',
//          SITEFIL='SIT(0)',
//          LABEL=1,
//          SERIAL=,
//          DISP='NEW.CATLG.DELETE',
//          UNIT=DISK,
//          SPCUNIT=TRK,
//          PRIMARY=400,
//          SECNDRY=30,
//          TEMP=SYSDA,
//          WORKSPC=400,
//          SORTCTL=TSORTCTL,
//          OUT=A
//
//PRE EXEC PGM=IERGENER,ACCT=(3100,2286,02),REGION=128K
//
//*  SAVE A BACKUP COPY OF 74+ MASTER FILE ON TAPE
//
//SYSIN DD DUMMY,DCB=BLKSIZE=2000
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.AQSMSTR,
//  DISP=(OLD,KEEP)
//SYSUT2 DD DSN=A.EP.MSR(+1),
//  UNIT=TAPE,
//  LABEL=(S,LABEL,SL),
//  DCB=(A,DDGDUMMY,RECFM=VR,BLKSIZE=12800),
//  DISP=(S,DISP),
//  VOL=SER=SERIAL
//
//EDIT  EXEC PGM=SPROG1,ACCT=(3100,2239,02),
//      COND=(0,NE),
//      REGION=120K,
//      TIME=30
//
//*  EDIT AQDHS FILE MAINTENANCE TRANSACTIONS
//
//STEPLIB  DD DSN=PROJECT..LOAD,
//          DISP=(SHR,PASS)
//
//*  INPUT DATA SET - EDIT OPTIONS CONTROL CARD
//
//AQSOPTIN DD DDNAME=OPTIONS,
//          DCB=BLKSIZE=80
//
//*  INPUT DATA SET - AQDHS TRANSACTIONS
//
//AQSTRANS DD DDNAME=INPUT,
//          DCB=BLKSIZE=80
//
//*  INPUT DATA SET - KEY PORTION OF VALID PARM, METH, UNIT TABLE
//
//AQSPARMS DD DSN=PROJECT..SPARMKFL,
//          DISP=(SHR,PASS)
//
//*  INPUT DATA SET - VALID SITE CODE TABLE

```

```

/**
//AOSSITES DD DSNAME=&PROJECT..&SITEFIL,
//          DISP=(SHR,PASS)
/**
- /*** OUTPUT DATA SET - AODHS INTERNAL TRANSACTIONS
/**
//AOSINTRN DD UNIT=&TEMP,
//          DISP=(NEW,PASS,DELETE),
//          SPACE=(TRK,(&WORKSPC),,CONTIG),
//          DCB=(RECFM=FB,LRECL=68,BLKSIZE=12240),
//          DSNAME=&&TRANS
/**
/*** OUTPUT DATA SET - TRANSACTION LISTING
/**
//AOSCONER DD SYSOUT=&OUT
/**
/*** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//AOSPRINT DD SYSOUT=&OUT
/**
/*** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=&OUT
/**
//SYSOUT   DD SYSOUT=&OUT
/**
//SYSDOUT  DD SYSOUT=&OUT
/**
//SYSDTERM DD SYSOUT=&OUT
/**
//SYSDUMP  DD SYSOUT=&OUT
/**
//SORT     EXEC PGM=SORT,ACCT=(3100,2286,02),
//          PARM='CORE=40960',
//          REGION=110K,
//          TIME=6
/**
/*** SORT INTERNAL TRANSACTIONS INTO FILE SEQUENCE
/**
//SORTLIB DD DSNAME=SYS1.SORTLIB,
//          DISP=(SHR,PASS)
/**
//SYSOUT   DD SYSOUT=&OUT
/**
//SORTWK01 DD UNIT=&TEMP,
//          SPACE=(TRK,(&WORKSPC),,CONTIG)
/**
//SORTWK02 DD UNIT=(&TEMP,SEP=SortWK01),
//          SPACE=(TRK,(&WORKSPC),,CONTIG)
/**
//SORTWK03 DD UNIT=(&TEMP,SEP=(SortWK01,SortWK02)),
//          SPACE=(TRK,(&WORKSPC),,CONTIG)
/**
//SORTIN   DD DSNAME=&&TRANS,
//          DCB=(RECFM=FB,LRECL=68,BLKSIZE=12240),
//          DISP=(OLD,DELETE)
/**
//SORTOUT  DD UNIT=&TEMP,
//          DISP=(NEW,PASS,DELETE),

```

EP2240 (cont.)

```

//          SPACE=(TRK,(&WORKSPC),RLSE),
//          DSNAME=&&SORTED,
//          DCB=(RECFM=FB,LRECL=68,BLKSIZE=12240)
/**
//SYSIN      DD DSNAME=&PROJECT..SYSIN(&SORTCTL),
//          DISP=(SHR,PASS)
/**
//UPDATE EXEC PGM=&PROG2,ACCT=(3100,2240,02),
//          REGION=150K,
//          TIME=20
/**
/**MAINTAIN ADDHS MASTER FILE
//STEP1.B DD DSNAME=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
/**
/** INPUT DATA SET - FILE MAINTENANCE CONTROL CARD
/**
//AQSINPUT DD DSNAME=INPUT,
//          DCB=BLKSIZE=80
/**
/** INPUT DATA SET - SORTED INTERNAL TRANSACTIONS
/**
//AQSINTRN DD DSNAME=&&SORTED,
//          DCB=(RECFM=FB,LRECL=68,BLKSIZE=12240),
//          DISP=(OLD,DELETE)
/** INPUT DATA SET - ADDHS OLD MASTER FILE
/**
//AQSOLDMS DD DSNAME=&PROJECT..&OLDMSTR,
//          DISP=(SHR,PASS)
/** OUTPUT DATA SET - ADDHS NEW MASTER FILE
/**
//AQSNEWS DD UNIT=SQUIT,
//          DISP=(NEW,PASS),
//          SPACE=(&SPGUNIT,(&PRIMARY,&SECNDRY),RLSE),
//          DCB=(RECFM=VB,BLKSIZE=12800),
//          DSNAME=&&MSTR
/**
/** OUTPUT DATA SET - INTERNAL TRANSACTION LISTING
/**
//AQSCONFR DD SYSOUT=&OUT
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//AQSPRINT DD SYSOUT=&OUT
/**
/** OUTPUT DATA SET OLD MASTER LISTING
/**
//AQSOLDRC DD DUMMY,DCB=BLKSIZE=2000
/**
/** OUTPUT DATA SET - NEW MASTER LISTING
/**
//AQSNEWRC DD DUMMY,DCB=BLKSIZE=2000
/**
/** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=&OUT
/**
//SYSOUT DD SYSOUT=&OUT
/**

```

```
//SYSDBOUT DD SYSOUT=&OUT  
//SYSDTERM DD SYSOUT=&OUT  
/*  
//SYSUDUMP DD SYSOUT=&OUT  
/*
```

```
//EP2241  PRJC PROJECT=IA.EPI,  
//          PROGRAM=CXCONVRT,  
//          OUT=A  
//*  
//CONVERT EXEC PGM=EPGRAM,ACCT=(3100,2241,02),  
//          REGION=110K,  
//          TIME=20  
//*  
//* CONVERT SAROAD INPUT FORMAT TO ADDHS INPUT FORMAT  
//*  
//STERLIB DD DSN=EPPROJECT..LOAD,  
//          DISP=(SHR,PASS)  
//*  
//* INPUT DATA SET - SAROAD TRANSACTIONS  
//*  
//AQSAROAD DD DDNAME=INPUT,  
//          DCR=RLKSIZE=80  
//*  
//* OUTPUT DATA SET - ADDHS TRANSACTIONS  
//*  
//AOSTRANS DD DDNAME=OUTPUT  
//*  
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES  
//*  
//AOSPRINT DD SYSOUT=&OUT  
//*  
//* OUTPUT DATA SETS - SYSTEM OPERATION  
//*  
//SYSPRINT DD SYSOUT=&OUT  
//*  
//SYSOUT DD SYSOUT=&OUT  
//*  
//SYSOROUT DD SYSOUT=&OUT  
//*  
//SYSOTERN DD SYSOUT=&OUT  
//*  
//SYSUOHMP DD SYSOUT=&OUT  
//*
```

```

//EP2286  PROC PROJECT='A.EP',
//          PROGRAM=AXCONVRT,
//          OLDMASTER=AQSMSTR,
//          LABEL=1,
//          SERIAL=,
//          DISP='NEW,CATLG,DELETE',
//          SPCUNIT=TRK,
//          PRIMARY=200,
//          SECNDRY=50,
//          OUT=4
//*
//PRE EXEC PGM=IEBGENER,ACCT=(3100,2286,02),REGION=128K
//*
//*  SAVE A BACKUP COPY OF 74+ MASTER FILE ON TAPE
//*
//SYSIN DD DUMMY,DCB=BLKSIZE=2000
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=A.EP.AQSMSTR,
//  DISP=(OLD,KEEP)
//SYSUT2 DD DSN=A.EP.MSR(+1),
//  UNIT=TAPE,
//  LABEL=(SLABEL,SL),
//  DCB=(A.GDDUMMY,RECFM=VB,BLKSIZE=12800),
//  DISP=(&DISP),
//  VOL=SER=&SERIAL
//*
//SUBMIT EXEC PGM=&PROGRAM,ACCT=(3100,2242,02),
//          COND=(0,NE),
//          REGION=130K,
//          TIME=10
//*
//*  CONVERT ADDHS FILE TO SAROAD INPUT FORMAT
//*
//STEPLIB DD DSNNAME=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//*
//*  INPUT DATA SET - OLD ADDHS MASTER FILE
//*
//AQSMSTR DD DSNNAME=&PROJECT..&OLDMSTR,
//          DISP=(SHR,PASS)
//*
//*  OUTPUT DATA SET - NEW ADDHS MASTER FILE
//*
//AQSNEMHS DD UNIT=DISK,
//          DISP=(NEW,PASS),
//          DCB=(RECFM=VB,BLKSIZE=12800),
//          SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),
//          DSNNAME=&MSTR
//*
//*  OUTPUT DATA SET - SAROAD ADD FILE
//*
//AQSADEFI DD DDNAME=ADDFILE
//*
//*  OUTPUT DATA SET - SAROAD CHANGE FILE
//*
//AQSCHGFI DD DDNAME=CHNGEFL
//*
//*  OUTPUT DATA SET - DIAGNOSTIC MESSAGES
//*

```

```
//AOSPRINT DD SYSOUT=EQOUT
/**
/** OUTPUT DATA SETS - SYSTEM OPERATION
/**
//SYSPRINT DD SYSOUT=EQOUT
/**
//SYSOUT DD SYSOUT=EQOUT
/**
//SYSOROUT DD SYSOUT=EQOUT
/**
//SYSOTERM DD SYSOUT=EQOUT
/**
//SYSUDUMP DD SYSOUT=EQOUT
/**
```

```
//EP2287  PROC PROJECT=IA.EPI.
//      PROGRAM=LXINGPRC,
//      TEMP=DISK,
//      MSTRFIL=AQSMSTR,
//      ANSWREL=RTANSRO6,
//      DISP='NEW,PASS,DELETE',
//      SPCUNIT=TRK,
//      PRIMARY=100,
//      SECNDRY=50,
//      OUT=A
//*
//COMPILE EXEC PGM=&PROGRAM,ACCT=(3100,2243,02),
//      REGION=60K,
//      TIME=(1,0)
//*
//* PRODUCE AQDHS RETRIEVAL PROGRAM
//*
//STEPLIB DD DSNAME=&PROJECT..LOAD,
//      DISP=(SHR,PASS)
//*
//* INPUT DATA SET - RETRIEVAL PROGRAM SKELETON
//*
//AQSDINPGM DD DSNAME=&PROJECT..RTRETRVR,
//      DISP=(SHR,PASS)
//*
//* INPUT DATA SET - RETRIEVAL SPECIFICATION CARDS
//*
//AQSDINPUT DD DDNAME=INPUT,
//      DGB=3LKSIZE=80
//*
//* OUTPUT DATA SET - RETRIEVAL PROGRAM
//*
//AQSDTRVR DD UNIT=STEMP,
//      DISP=(NEW,PASS),
//      SPACE=(TRK,(5,2),RLSE),
//      DSNAME=&&PROGRAM
//*
//* OUTPUT DATA SET - DIAGNOSTIC MESSAGES
//*
//AQSPRINT DD SYSOUT=&OUT
//*
//* OUTPUT DATA SETS - SYSTEM OPERATION
//*
//SYSPRINT DD SYSOUT=&OUT
//*
//SYSOUT DD SYSOUT=&OUT
//*
//SYSDROUT DD SYSOUT=&OUT
//*
//SYSDTERM DD SYSOUT=&OUT
//*
//SYSDUMP DD SYSOUT=&OUT
//*
//COBOL EXEC PGM=IKFCBL00,ACCT=(3100,2244,02),
//      PARM='SIZE=114K,RUC=10K,LIB,NOSQ,NOSOURCE,NOSUPMAP,
//      REGION=148K,
//      TIME=(2,0)
//*
//* COMPILE RETRIEVAL PROGRAM
```

EP2287 (cont.)

```

/**
/**
/** INPUT DATA SET - SOURCE LIBRARY
/**
//SYSLIB DD DSN=PROJECT..AQS.SOURCE,
// DISP=(SHR,PASS)
/**
/** INPUT DATA SET - COBOL RETRIEVAL PROGRAM SOURCE CODE
/**
//SYSIN DD DSN=PROGRAM,
// DISP=(OLD,DELETE)
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//SYSPRINT DD SYSOUT=&OUT
/**
/** OUTPUT DATA SET - COBOL RETRIEVAL PROGRAM OBJECT CODE
/**
//SYSLIN DD UNIT=&TEMP,
// DISP=(NEW,PASS),
// SPACE=(TRK,(50,5),RLSE),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=1600),
// DSN=&&OBJMOD
/**
/** UTILITY DATA SETS
/**
//SYSUT1 DD UNIT=&TEMP,
// SPACE=(TRK,(50,100))
/**
//SYSUT2 DD UNIT=(&TEMP,SEP=SYSUT1),
// SPACE=(TRK,(50,100))
/**
//SYSUT3 DD UNIT=(&TEMP,SEP=(SYSUT1,SYSUT2)),
// SPACE=(TRK,(50,100))
/**
//SYSUT4 DD UNIT=(&TEMP,SEP=(SYSUT1,SYSUT2,SYSUT3)),
// SPACE=(TRK,(50,100))
/**
//LKED EXEC PGM=IEWL,ACCT=(3100,2286,02),
// PARM=LIST,LET,XREF,
// COND=(5,'T',COBOL),
// REGION=110K,
// TIME=(1,0)
/**
/** LINK-EDIT RETRIEVAL
/**
/**
/** INPUT DATA SET - AUTO-CALL LIBRARY
//SYSLIB DD DSN=PROD.COBLIB,DISP=SHR
/**
/** INPUT DATA SET - COBOL RETRIEVAL PROGRAM OBJECT CODE
/**
//SYSLIN DD DSN=&&OBJMOD,
// DISP=(OLD,DELETE)
/**
/** OUTPUT DATA SET - DIAGNOSTIC MESSAGES
/**
//SYSPRINT DD SYSOUT=&OUT
/**

```

```

/* OUTPUT DATA SET - COSOL RETRIEVAL PROGRAM LOAD MODULE

```

```

/*

```

```

//SYSLMOD DD UNIT=&TEMP,

```

```

//          DISP=(MOD,PASS),

```

```

//          SPACE=(TRK,(10,5,1)),

```

```

//          DSNNAME=&&LOADMOD(RETRIEVE)

```

```

/*

```

```

/* UTILITY DATA SET

```

```

/*

```

```

//SYSUT1 DD UNIT=&TEMP,

```

```

//          SPACE=(TRK,(10,5))

```

```

/*

```

```

//RETRIEVE EXEC PGM=*,LKED,SYSLMOD,ACCT=(3100,2287,02),

```

```

//          COND=((5,LT,COSOL),(5,LT,LKED)),

```

```

//          REGION=130K,

```

```

//          TIME=3

```

```

/*

```

```

/* RETRIEVE ANSWER FILE FROM AODHS MASTER FILE

```

```

/*

```

```

//STEPLIB DD DSNNAME=&PROJECT..LOAD,

```

```

//          DISP=(SHR,PASS)

```

```

/*

```

```

/* INPUT DATA SET - AODHS MASTER FILE

```

```

/*

```

```

//AODMASTR DD DSNNAME=&PROJECT..&MSTREIL,

```

```

//          DISP=(SHR,PASS)

```

```

/*

```

```

/* OUTPUT DATA SET - ANSWER FILE

```

```

/*

```

```

//AOSANSWR DD UNIT=&TEMP,

```

```

//          DISP=(SEDISP),

```

```

//          SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),

```

```

//          DCR=(REGEN=VR,RLKSIZE=12800),

```

```

//          DSNNAME=&PROJECT..&ANSWRFL

```

```

/*

```

```

/* OUTPUT DATA SET - DIAGNOSTIC MESSAGES

```

```

/*

```

```

//AOSPRINT DD SYSOUT=&OUT

```

```

/*

```

```

/* OUTPUT DATA SETS - SYSTEM OPERATION

```

```

/*

```

```

//SYSPRINT DD SYSOUT=&OUT

```

```

/*

```

```

//SYSOUT DD SYSOUT=&OUT

```

```

/*

```

```

//SYSDROUT DD SYSOUT=&OUT

```

```

/*

```

```

//SYSDTERM DD SYSOUT=&OUT

```

```

/*

```

```

//SYSUDUMP DD SYSOUT=&OUT

```

```

/*

```

```

//EP2288  PROC PROJECT=1A.EPI,
//          PROGRAM=EXRPTLST,
//          MSTRFIL=2TANSD06,
//          PARMKFI='PML(0)',
//          PARMDFI='PM2(0)',
//          SITEFIL='SIT(0)',
//          STNDFIL='STD(0)',
//          OUT=A
//
//
//REPORT EXEC PGM=&PROGRAM,ACCT=(3100,2288,02),
//          REGION=150K,
//          TIME=2
//
//* LIST CONTENTS OF ADDHS MASTER FILE
//
//STEPLIB DD DSN=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//
//* INPUT DATA SET - CONTROL CARD
//
//AQSDINP DD DSN=&PROJECT..INP,
//          DCB=9LKSIZE=80
//
//* INPUT DATA SET - ADDHS MASTER FILE
//
//AQSMASR DD DSN=&PROJECT..&MSTRFIL,
//          DISP=(SHR,PASS)
//
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE
//
//AQSPARAK DD DSN=&PROJECT..&PARMKFI,
//          DISP=(SHR,PASS)
//
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE
//
//AQSPARMD DD DSN=&PROJECT..&PARMDFI,
//          DISP=(SHR,PASS)
//
//* INPUT DATA SET - VALID SITE CODE TABLE
//
//AQSSITES DD DSN=&PROJECT..&SITEFIL,
//          DISP=(SHR,PASS)
//
//* INPUT DATA SET - PARAMETER STANDARDS TABLE
//
//AQSTNDRD DD DSN=&PROJECT..&STNDFIL,
//          DISP=(SHR,PASS)
//
//* OUTPUT DATA SET - REPORT LISTING
//
//AQSPRINT DD SYSOUT=&OUT
//
//* OUTPUT DATA SETS - SYSTEM OPERATION
//
//SYSPRINT DD SYSOUT=&OUT
//
//SYSOUT DD SYSOUT=&OUT
//
//SYSOROUT DD SYSOUT=&OUT

```

EP2288 (cont.)

/**

//SYSDTERM DD SYSOUT=SQOUT

/**

//SYSUDUMP DD SYSOUT=EQOUT

/**

EP2289

```

//EP2289  PROC PROJECT=1A.EPI,
//          PROGRAM=MXSENTNL,
//          MSTREIL=,
//          STATFIL=MTMSTRAA,
//          TEMP=SYSDA,
//          DISP='NEW,PASS,DELETE',
//          SPCUNIT=TRK,
//          PRIMARY=100,
//          SECNDRY=20,
//          OUT=A
//
//**
//SENTINEL EXEC PGM=&PROGRAM,ACCT=(3100,2289,02),
//          REGION=120K,
//          TIME=(1,0)
//
//** COPY MASTER FILE AND APPEND SENTINEL RECORD
//
//STEPLIB  DD DSN=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//
//** INPUT DATA SET - ADDMS MASTER FILE
//
//AQSMATR  DD DSN=&PROJECT..EMSTREIL,
//          DISP=(SHR,PASS)
//
//** OUTPUT DATA SET - FLAGGED MASTER FILE
//
//AQSENTNL DD UNIT=&TEMP,
//          DISP=(&DISP),
//          SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),
//          DCR=(RECFM=VB,BLKSIZE=12800),
//          DSN=&PROJECT..&STATFIL
//
//** OUTPUT DATA SET - MESSAGE LISTING
//
//AQSPRINT DD SYSOUT=&OUT
//
//** OUTPUT DATA SETS - SYSTEM OPERATION
//
//SYSPRINT DD SYSOUT=&OUT
//
//SYSOUT   DD SYSOUT=&OUT
//
//SYSDROUT DD SYSOUT=&OUT
//
//SYSDTERM DD SYSOUT=&OUT
//
//SYSUDUMP DD SYSOUT=&OUT
//

```

```

//EP2291  PROC PROJECT='A.EPI,
//          PROGRAM=DXSTATIS,
//          MSTRFIL=MTANSR07,
//          STATFIL=STMSTRAA,
//          UNIT=SYSDA,
//          DISP='NEW,PASS,DELETE',
//          SPCUNIT=TRK,
//          PRIMARY=300,
//          SECNDRY=50,
//          RECFM=FB,
//          LRECL=168,
//          BLKSIZE=1848,
//          OUT=A
//
// *
//ANALYZE EXEC PGM=&PROGRAM,ACCT=(3100,2292,02),
//          REGION=100K,
//          TIME=4
// *
// * PERFORM STATISTICAL ANALYSIS OF READINGS IN AODHS MASTER FILE
// *
//STEPL18 DD DSN=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
// *
// * INPUT DATA SET - AODHS MASTER FILE
// *
//FT08F001 DD DSN=&PROJECT..&MSTRFIL,
//          DISP=(SHR,PASS)
// *
// * INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE
// *
//FT09F001 DD DSN=&PARAMTMD,
//          DISP=(OLD,DELETE)
// *
// * OUTPUT DATA SET - STATISTICS FILE
// *
//FT10F001 DD UNIT=&UNIT,
//          DISP=(&DISP),
//          SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),
//          DSN=&PROJECT..&STATFIL,
//          DCB=(RECFM=&RECFM,LRECL=&LRECL,BLKSIZE=&BLKSIZE)
// *
// * OUTPUT DATA SET - DIAGNOSTIC MESSAGES
// *
//FT06F001 DD SYSOUT=&OUT
// *
// * OUTPUT DATA SETS - SYSTEM OPERATION
// *
//SYSPRINT DD SYSOUT=&OUT
// *
//SYSUDUMP DD SYSOUT=&OUT
// *

```

```

//EP2292  PROC PROJECT='A.EF',
//          PROGRAM=SEXPRINTS,
//          PARMKFL='PM1(0)',
//          PARMDFL='PM2(0)',
//          SITEFIL='SIT(0)',
//          STNDFIL='STD(0)',
//          STATFIL=STANS&07,
//          OUT=A
//
//
//PRINTS EXEC PGM=&PROGRAM,ACCT=(3100,2293,72),
//          REGION=99K,
//          TIME=(1,0)
//
//* LIST DATA ANALYSIS STATISTICS FILE
//
//STEPLIB DD DSNAME=&PROJECT..LOAD,
//        DISP=(SHR,PASS)
//
//* INPUT DATA SET - ADDHS STATISTICS FILE
//
//AQSTATIS DD DSNAME=&PROJECT..&STATFIL,
//        DISP=(SHR,PASS)
//
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE
//
//AQSPARMK DD DSNAME=&PROJECT..&PARMKFL,
//        DISP=(SHR,PASS)
//
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE
//
//AQSPARMD DD DSNAME=&PROJECT..&PARMDFL,
//        DISP=(SHR,PASS)
//
//* INPUT DATA SET - VALID SITE CODE TABLE
//
//AQSSITES DD DSNAME=&PROJECT..&SITEFIL,
//        DISP=(SHR,PASS)
//
//* INPUT DATA SET - PARAMETER STANDARDS TABLE
//
//AQSTNDRD DD DSNAME=&PROJECT..&STNDFIL,
//        DISP=(SHR,PASS)
//
//* OUTPUT DATA SET - REPORT LISTING
//
//AQSPRINT DD SYSOUT=&OUT
//
//* OUTPUT DATA SETS - SYSTEM OPERATION
//
//SYSPRINT DD SYSOUT=&OUT
//
//SYSOUT DD SYSOUT=&OUT
//
//SYSD9OUT DD SYSOUT=&OUT
//
//SYSOTERM DD SYSOUT=&OUT
//
//SYSUDUMP DD SYSOUT=&OUT
//

```

```

//EP2293  PROC PROJECT='A.EP',
//          PROGRAM=IXSLD AVG,
//          MSTRFIL=RTANSR06,
//          PARMKFL='PM1(0)',
//          PARMDFL='PM2(0)',
//          SITEFIL='SIT(0)',
//          STNDFIL='STD(0)',
//          OUT=A
//*
//REPORT EXEC PGM=&PROGRAM,ACCT=(3100,2294,02),
//          REGION=150K,
//          TIME=2
//*
//* LIST CONTENTS OF AQDHS MASTER FILE WITH SLIDING AVERAGE OF READINGS
//*
//STEPLIB DD DSNNAME=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - CONTROL CARD
//*
//AQSDINPUT DD DDNAME=INPUT,
//          DCR=BLKSIZE=80
//*
//* INPUT DATA SET - AQDHS MASTER FILE
//*
//AQSDMASTR DD DSNNAME=&PROJECT..&MSTRFIL,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE
//*
//AQSDPARMK DD DSNNAME=&PROJECT..&PARMKFL,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - DESCRIPTION PORTION OF TABLE
//*
//AQSDPAR4D DD DSNNAME=&PROJECT..&PARMDFL,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - VALID SITE CODE TABLE
//*
//AQSSITES DD DSNNAME=&PROJECT..&SITEFIL,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - PARAMETER STANDARDS TABLE
//*
//AQSTNDRD DD DSNNAME=&PROJECT..&STNDFIL,
//          DISP=(SHR,PASS)
//*
//* OUTPUT DATA SET - REPORT LISTING
//*
//AQSPRINT DD SYSOUT=&OUT
//*
//* OUTPUT DATA SETS - SYSTEM OPERATION
//*
//SYSPRINT DD SYSOUT=&OUT
//*
//SYSOUT DD SYSOUT=&OUT
//*
//SYSDOUT DD SYSOUT=&OUT

```

/*

//SYSDTERM DD SYSOUT=&OUT

/*

//SYSUDIUMP DD SYSOUT=&OUT

/*

```

//EP2294  PROC PROJECT='A,EP',
//          PROGRAM=NXSENTNL,
//          PARMFEL='IDM1(0)'.
//          TEMP=SYSDA,
//          DISP=NEW,PASS,DELETE,
//          SPCUNIT=TRK,
//          PRIMARY=100,
//          SECNDRY=20,
//          OUT=A
//*
//SENTINEL EXEC PGM=&PROGRAM,ACCT=(3100,2291,02),
//          REGION=60K,
//          TIME=(1,0)
//*
//* COPY PARAMETER KEY FILE AND APPEND SENTINEL RECORD
//*
//STEP18  DD DSN=&PROJECT..LOAD,
//          DISP=(SHR,PASS)
//*
//* INPUT DATA SET - KEY PORTION OF PARAMETER, METHOD, UNIT TABLE
//*
//AQSPARMK DD DSN=&PROJECT..&PARMFEL,
//          DISP=(SHR,PASS)
//*
//* OUTPUT DATA SET - FLAGGED KEY FILE
//*
//AQSPARME DD UNIT=STEMP,
//          DISP=(&DISP),
//          SPACE=(&SPCUNIT,(&PRIMARY,&SECNDRY),RLSE),
//          DCB=(RECFM=F,LRECL=80,BLKSIZE=80),
//          DSN=&&PARANTMP
//*
//* OUTPUT DATA SET - MESSAGE LISTING
//*
//AQSPRINT DD SYSOUT=&OUT
//*
//* OUTPUT DATA SETS - SYSTEM OPERATION
//*
//SYSPRINT DD SYSOUT=&OUT
//*
//SYSOUT  DD SYSOUT=&OUT
//*
//SYSDBOUT DD SYSOUT=&OUT
//*
//SYSDTERM DD SYSOUT=&OUT
//*
//SYSUDUMP DD SYSOUT=&OUT
//*

```